Installation & Maintenance Data	IM 1193
	Group: **PTAC**
	Part Number: **910140864**
	Date: **October 2013**

Packaged Terminal Air Conditioner

16" x 42" PGAN with Top-Mounted Hydronic Heat

Note: *Installation and maintenance are to be performed only by qualified personnel who are familiar with local codes and regulations and are experienced with this type of equipment.*

Caution: *Sharp edges and coil surfaces are potential injury hazards.*

This manual must be left with the owner of the equipment.

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Safety Information

Follow all safety codes. Wear safety glasses and work gloves. **Use a quenching cloth for brazing operations.** Have a fire extinguisher available. Follow all warnings and cautions in these instructions and attached to the unit. Consult applicable local building codes and National Electrical Codes (NEC) for special requirements.

Recognize safety information. When you see a safety symbol on the unit or in these instructions, be alert to the potential for personal injury. Understand the meanings of the words DANGER, WARNING, and CAUTION. DANGER identifies the most serious hazards that will result in death or severe personal injury; WARNING means the hazards can result in death or severe personal injury; CAUTION identifies unsafe practices that can result in personal injury or product and property damage.

Improper installation, adjustment, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions which may result in personal injury or property damage. This product must be installed only by personnel with the training, experience, skills, and applicable licensing that makes him/her "a qualified professional HVACR installer."

⚠ WARNING

The installer must determine and follow all applicable codes and regulations. This equipment presents hazards of electricity, rotating parts, sharp edges, heat and weight. Failure to read and follow these instructions can result in property damage, severe personal injury or death. This equipment must be installed by experienced, trained personnel only.

⚠ DANGER

Hazardous Voltage!
Disconnect all electric power including remote disconnects before servicing. Failure to disconnect power before servicing can cause severe personal injury or death.

⚠ CAUTION

Use copper conductors only. Unit terminals are not designed to accept other types of conductors. Failure to do so can damage equipment.

Inspection

When the equipment is received all items should be carefully checked against the bill of lading to be sure all crates and cartons have been received. All units should be carefully inspected for damage when received. If any damage is noticed, the carrier should make the proper notation on the delivery receipt acknowledging the damage. The carrier should also fill out a carrier Inspection Report. The Daikin Traffic Department should then be contacted. The unit nameplate should be checked to make sure the voltage agrees with the power supply available.

Each conditioner consists of the following components:

1. **Cooling Chassis –** Shipped separate in a single carton.
2. **Wall Sleeve –** Shipped separate in a single carton or multi-pack of 15.
3. **Hydronic Heat Section –** Shipped separate in a single carton.
4. **Outdoor Louver –** Shipped separate in a single carton.
5. **Room Cabinet –** Shipped separate in a single carton with kickplate attached.

IMPORTANT

This product was carefully packed and thoroughly inspected before leaving the factory. Responsibility for its safe delivery was assumed by the carrier upon acceptance of the shipment. Claims for loss or damage sustained in transit must therefore be made upon the carrier, as follows:

VISIBLE LOSS OR DAMAGE

Any external evidence of loss or damage must be noted on the freight bill or carrier's receipt, and signed by the carrier's agent. Failure to adequately describe such external evidence of loss or damage may result in the carrier's refusal to honor a damage claim. The form required to file such a claim will be supplied by the carrier.

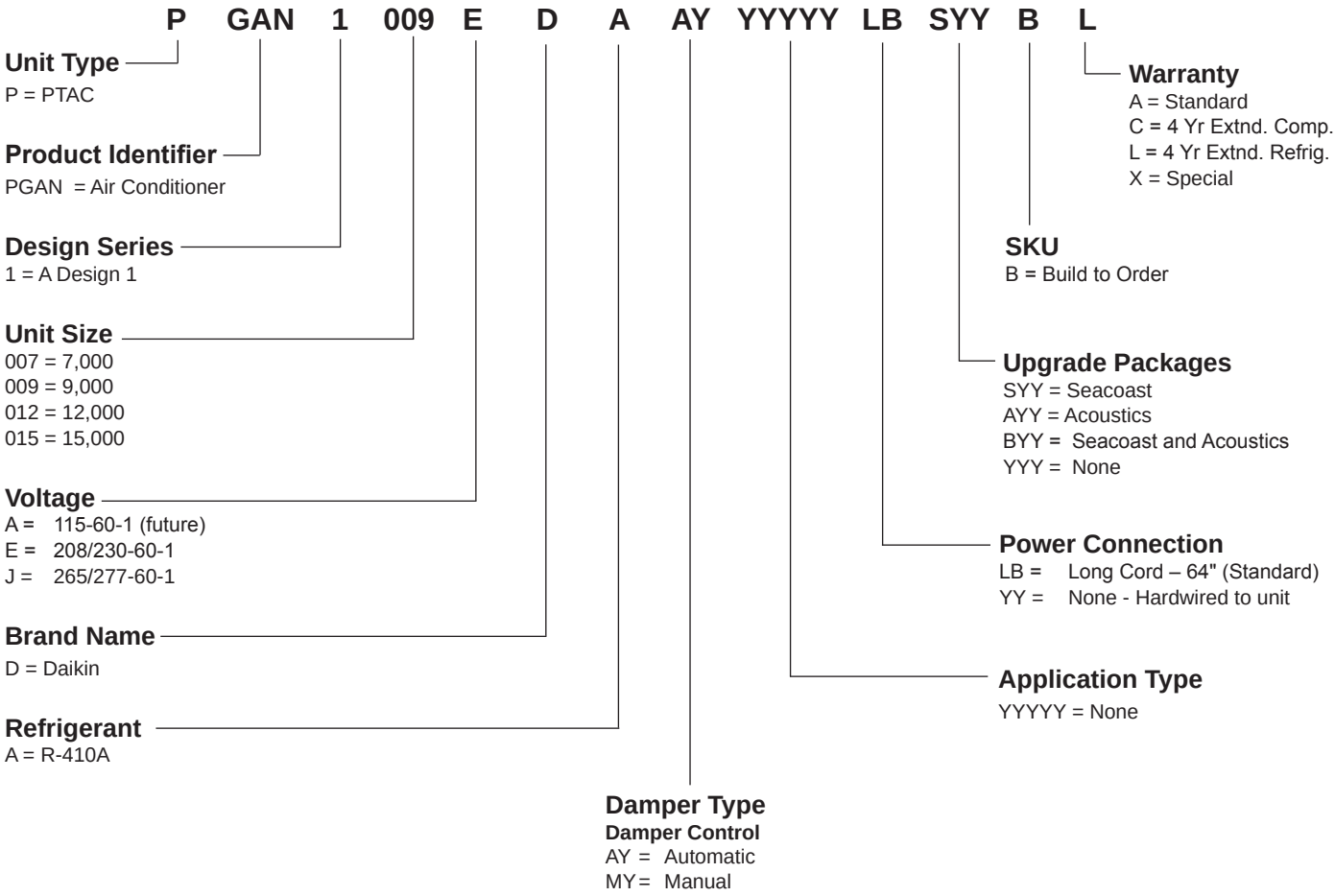
CONCEALED LOSS OR DAMAGE

Concealed loss or damage means loss or damage which does not become apparent until the product has been unpacked. The contents may be damaged in transit due to rough handling even though the carton may not show external damages. When the damage is discovered upon unpacking, make a written request for inspection by the carrier's agent within fifteen (15) days of the delivery date. File a claim with the carrier since such damage is the carrier's responsibility.

Now that you have made an investment in modern, efficient Daikin® equipment, its care and operation should be a high priority. For training information on all Daikin HVAC products, please visit us at www.daikinmcquay.com and click on Training or phone 540-248-0711 and ask for the Training Department.

Daikin Model PGAN Product Nomenclature

Note: *For Illustration purposes only. Not all options available with all models.*



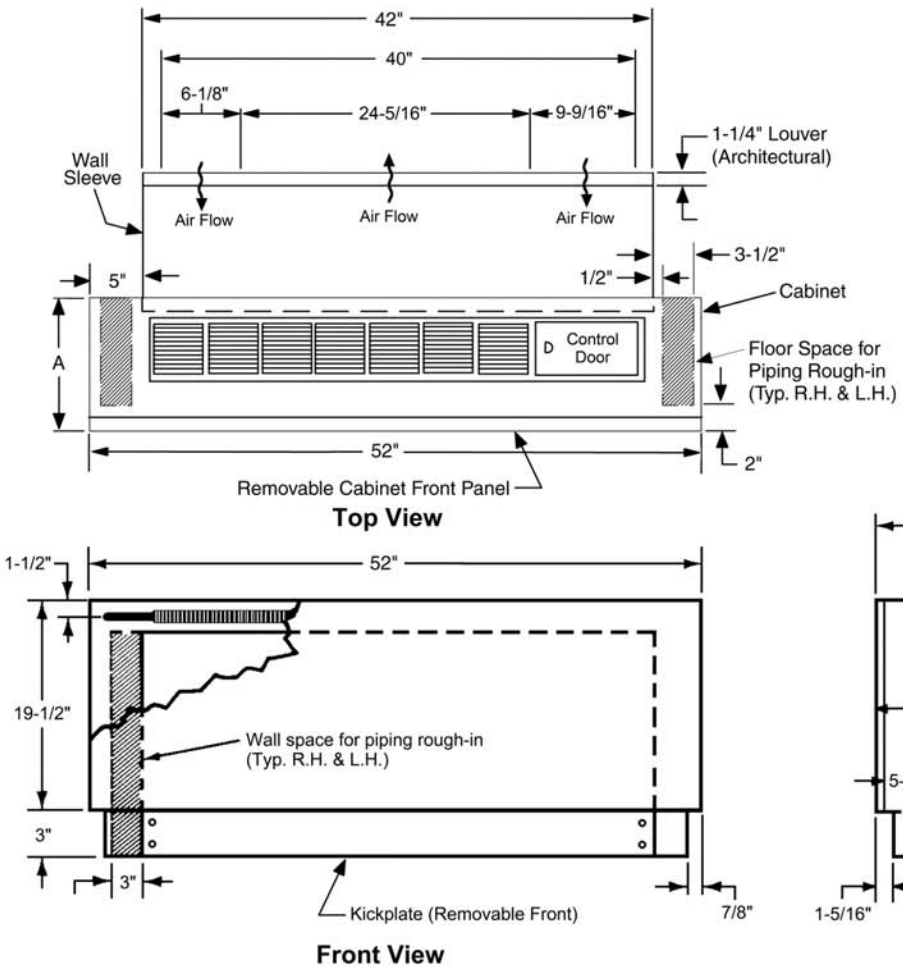
Note: *Hydronic heat coils and controls are orderable as accessories (not shown above).*

Unit Dimensions

Table 1: Cabinet & wall sleeve dimensions

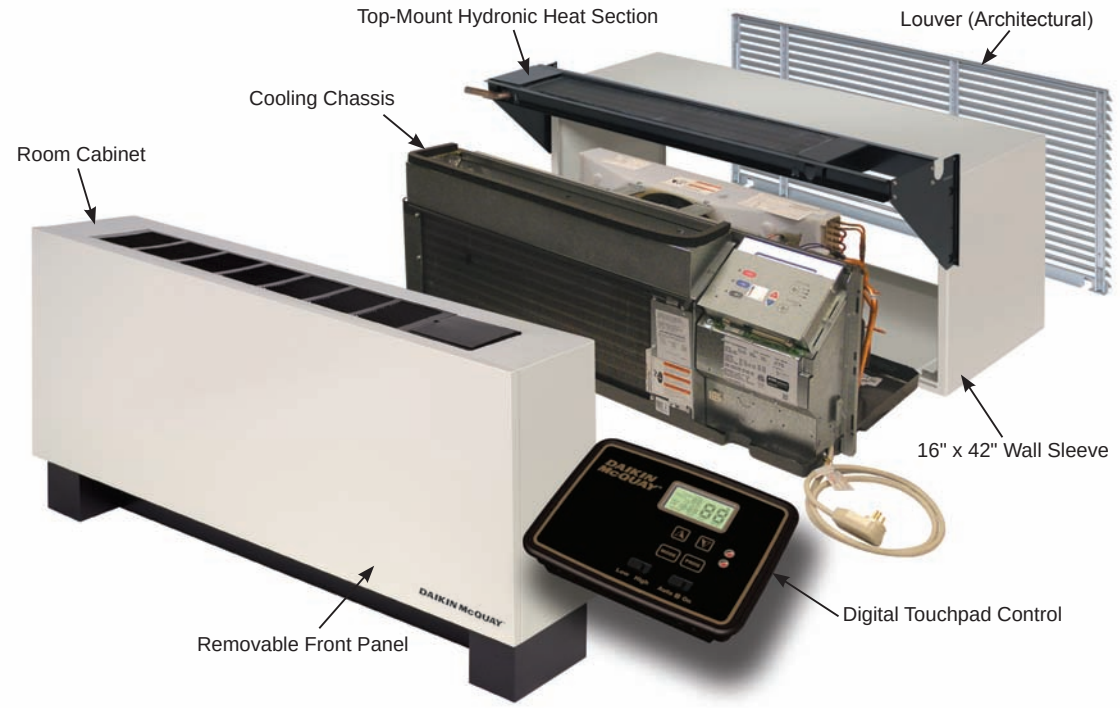
1¼" Recess for Architectural Louver		
"A" Room Cabinet	"D" Wall Sleeve	"B" Wall Thickness
18¾"	13¾"	4¾–5¾"
17¾"	13¾"	5¾–6¾"
16¾"	13¾"	6¾–7¾"
15¾"	13¾"	7¾–8¾"
14¾"	13¾"	8¾–9¾"
13¾"	13¾"	9¾–10¾"
12¾"	13¾"	10¾–11¾"
11¾"	13¾"	11¾–12¾"
10¾"	13¾"	12¾–13¾"
10¾"	14¾"	13¾–14¾"
10¾"	15¾"	14¾–15¾"
10¾"	16¾"	15¾–16¾"
10¾"	17¾"	16¾–17¾"

Standard Size Wall Sleeve



Note: *Electrical rough-in should be located behind kickplate (removable front) and below wall sleeve.*

Figure 1: PGAN 16" x 42" with top-mounted hydronic heat



⚠ WARNING

Residential and institutional cleaning compounds can cause permanent damage to the packaged terminal unit. To avoid damage to unit controls and heat transfer surfaces, do not spray cleaning compounds onto the discharge grille, return air opening, or unit controls. Normal cleaning can be accomplished by wiping the unit surface with a damp cloth. When using cleaning compounds on carpets, floors or walls, turn the unit off to avoid drawing potentially damaging vapors into the package terminal unit.

Wall Opening Requirements

When roughing in the opening for the wall sleeve, make certain there is sufficient clearance from the walls and floor. The wall sleeve should be positioned a minimum of 1-5/8" in from the room side finished wall to accommodate the room cabinet and the hydronic heat section mounting. A minimum distance of 3" above the finished floor is required for return air, although when using a louver frame in panel wall or thin wall construction, the opening must start 4" above the finished floor (including carpeting) to provide proper return air. Louver frames should be used for panel wall and thin wall applications to assure positive anchoring to the wall (See Figure 2). When using a louver frame, the opening must measure 16-5/8" × 42-5/8".

The rough opening for the wall sleeve should measure 16-1/4" high × 42-1/4" wide. Before installing the unit, check the wall opening to be sure the wall sleeve will slide into the opening unobstructed and there is allowance for a 1/8" to 1/4" pitch inside to outside for proper sleeve drainage. For masonry walls, a lintel must be used to provide support over each opening.

Installing Louver Frame

When a louver frame is used, it must be installed prior to, or at the same time, as the wall sleeve, and it must be level and square.

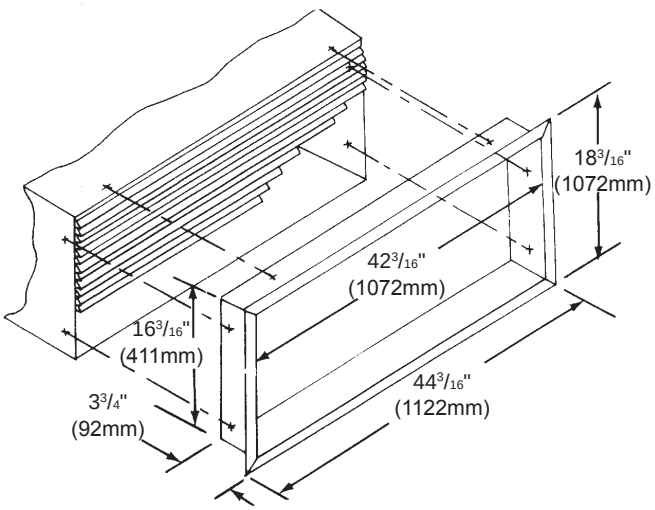
1. Apply caulking compound on the surfaces of the louver frame's four flanges which will come in contact with the wall. Add caulking as required for weather tight seal.
2. Insert the sleeve of the louver frame into the wall opening from the exterior of the building and apply firm pressure so that the caulked frame flanges are snug against the exterior of the building. Secure the louver frame to the wall if desired.
3. Secure the louver frame to the wall through the sides and top. Never secure the frame through the bottom as it may cause leaks.

If the louver frame is to be installed in a panel wall, it should be installed at the same time as the wall sleeve.

⚠ CAUTION

DO NOT drill holes in the bottom of the wall sleeve as it will cause leaks.

Figure 2: Louver frame dimensions



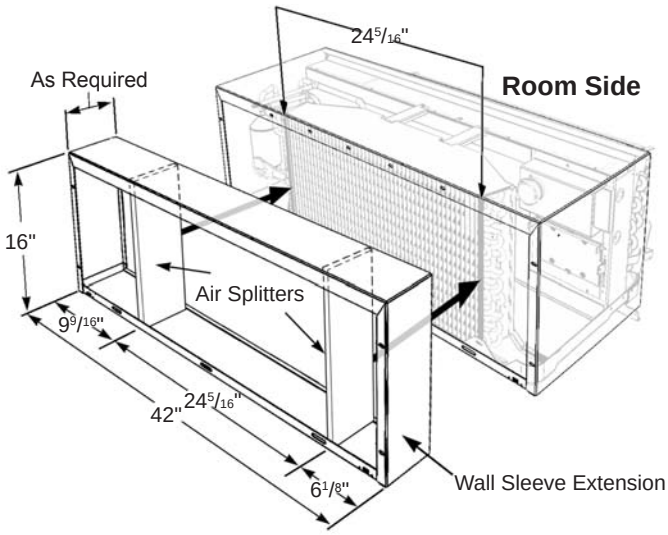
Note: *Wall Sleeve rough opening when using a Louver Frame must be 16-5/8" x 42-5/8"*

Installing Wall Sleeve Extension

Wall sleeve extensions are shipped in a separate carton and tagged to match the proper unit. Be sure to check tagging of the extension against that of the unit. Install the wall sleeve extension as follows:

1. Position the extension with standard wall sleeve so proper alignment with drain and mounting holes is achieved.
2. Place a bead of caulk around the perimeter of the wall sleeve and another bead around the mating side of the wall sleeve extension so that the joint is watertight. Do not permit caulking to block the weep holes. Be sure to use a resilient caulking such as silicone.
3. Assemble the wall sleeve extension to the wall sleeve. Clean out weep holes to assure proper drainage.
4. Continue wall sleeve installation according to instructions on page 8.

Figure 3: Wall sleeve extension



Wall Construction Types

Figure 4: Panel wall (thin) construction

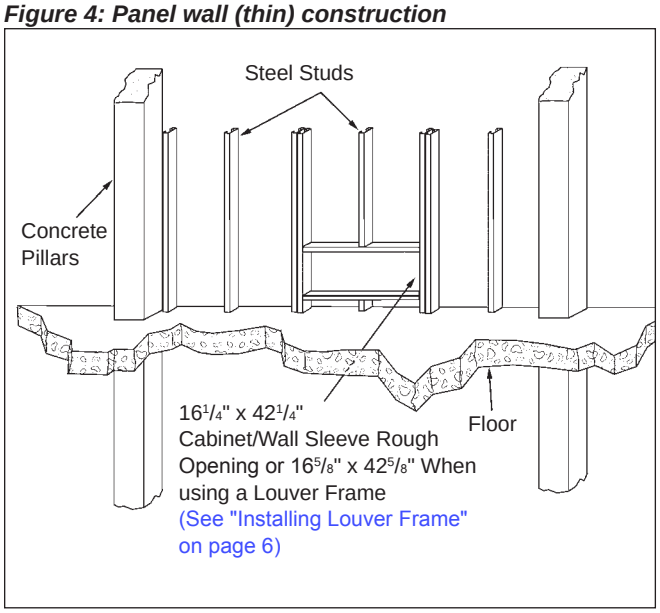

Steel Studs
Concrete Pillars
16¼" x 42¼" Cabinet/Wall Sleeve Rough Opening or 16⅝" x 42⅝" When using a Louver Frame
(See "Installing Louver Frame" on page 6)
Floor

Figure 5: Masonry wall (thick) construction

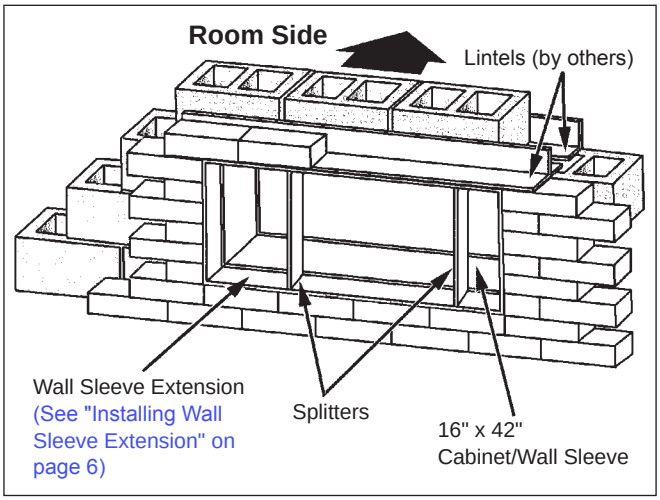
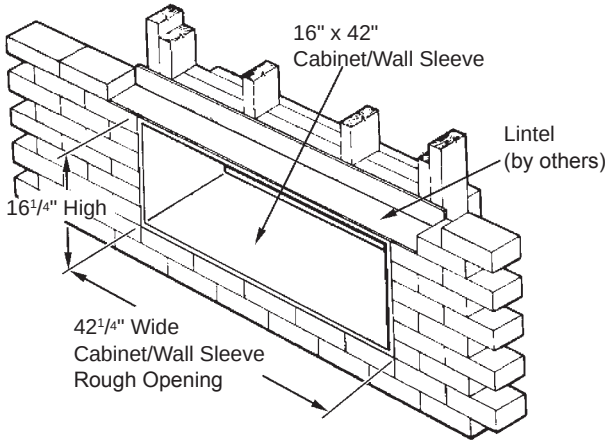


Figure 6: Frame and brick construction



⚠ CAUTION

Do not drill holes in the base of the wall sleeve. Use shims between the wall and the wall sleeve to prevent wall sleeve distortion during anchoring.

Note: *When using recessed louver wall sleeve, level and plumb wall sleeve using the top and sides of the sleeve and the chassis slide rails.* ***DO NOT*** *level using the bottom of the wall sleeve as it has a built in pitch to drain.*

Installing Louvers

1. Remove outside weather plug and weather panel from wall sleeve.
2. Make a temporary handle by looping a piece of flexible wire or heavy cord through the louver. This enables the installer to keep a firm grasp on the louver when installing from inside the room.
3. Manipulate the grille out through the rear sleeve opening using the handle, then pull the louver back to the wall sleeve flange so that the louver studs pass through the holes in the flange.
4. Attach washers and nuts and secure louver in place.
5. If the cooling chassis is not to be immediately installed, replace the weather panel.

Typical Stamped Louver (By Others)

1. Position the grille so that all four flanges are in the up position.
2. Insert the six grommets provided so the square end protrudes through the grille in the opposite direction from the flanges.
3. Manipulate the grille out through the rear sleeve opening using the plastic handle provided.
4. Align the guide pins located in the lower right- and left-hand corners of the grille with the corresponding holes in the rear of the wall sleeve.
5. Secure the grille by threading each of the six screws into the plastic grommets.
6. Remove the plastic handle from the center of the grille prior to installing the chassis into the sleeve.

⚠ WARNING

Check the indoor and outdoor grilles for obstructions. Airflow must not be restricted by exterior plants or walls The unit must be located where curtains, furniture, trees, or other objects do not block the air flow to and from the unit. If air is obstructed and/or deflected back into the unit, the air conditioner compressor may cycle on and off rapidly. This could damage the compressor or possibly void the warranty.

Applications utilizing field supplied louvers require additional considerations:

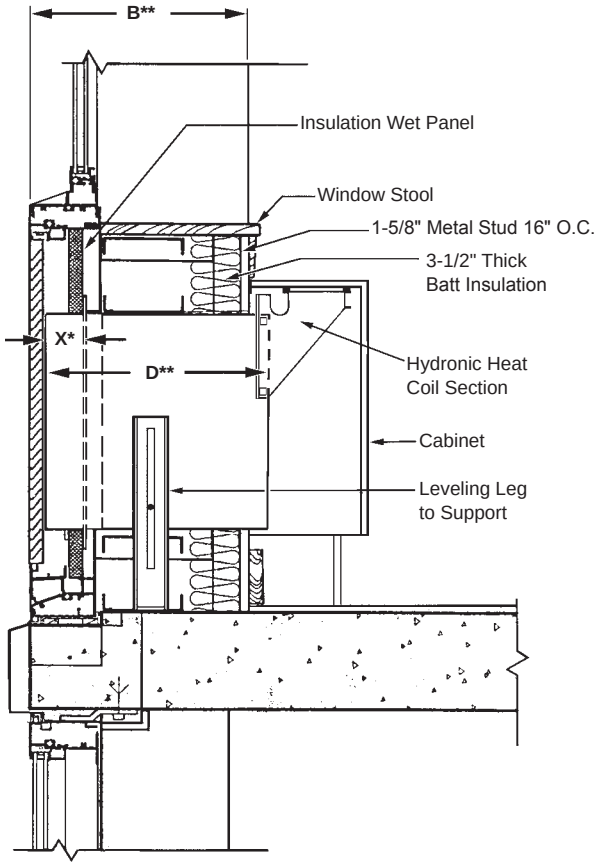
1. Louvers supplied by others must have 70% free area or a pressure drop not exceeding 0.05 in. w.g. (12.45 Pa) at 300 fpm (1.524 m/sec) face velocity, and a blade design that will not cause recirculation of air.
2. Daikin does not warrant the rain and water leakage resistance of its equipment when used with louvers by others.
3. All louvers by others must be approved by Daikin engineering prior to installation.

Figure 7 illustrates a typical installation using a field supplied, continuous louver. This method is for illustration purposes only. Other variations may be employed as long as they meet Daikin's louver specifications listed above and so long as adequate wall support is achieved. All structural supports and fasteners (except the optional top angle and turned down flange) are field supplied.

Installing Wall Sleeve

Thin Wall Construction

Figure 7: Wall sleeve installation for thin wall construction

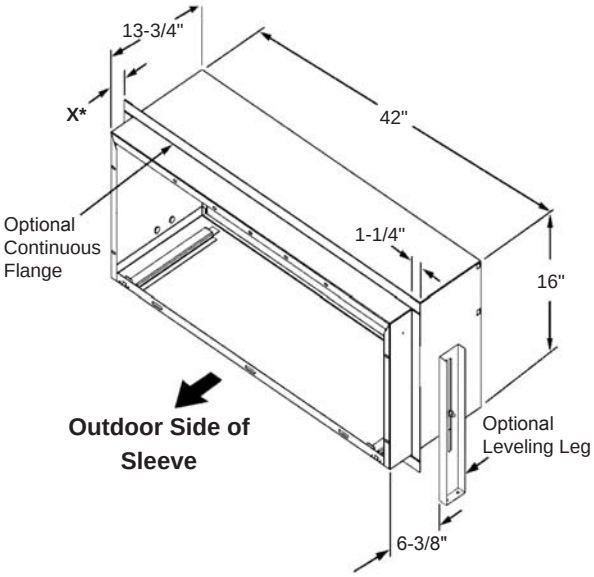


Notes:

** *See "Unit Dimensions" on page 5, for dimensions "**D**" and "**B**".*

* *Dimension "**X**" is field determined or specified. Flange is factory welded at given dimension when option is designated.*

Figure 8: Wall sleeve with optional leveling legs and continuous flange



Note: *Given dimensions are standard.*

Installation of wall sleeves with continuous louvers is very similar to that of applications with factory furnished louvers. Assuming the louver meets Daikin's criteria, as stated previously, proceed to install the wall sleeve as follows:

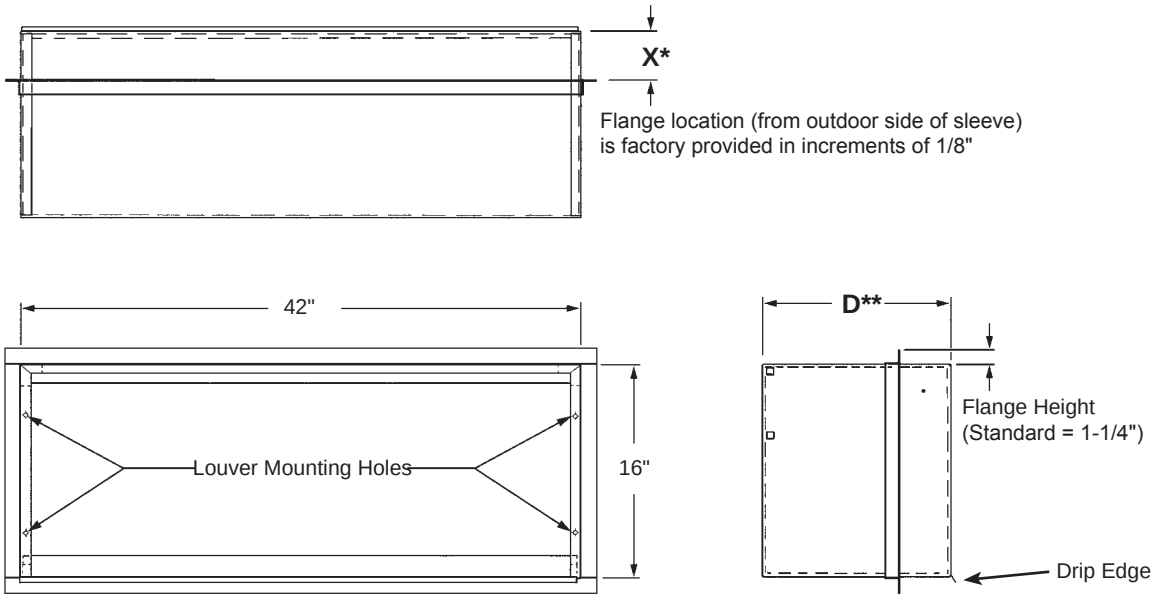
1. Clean the opening of all debris that may interfere with installation.
2. Position the wall sleeve into the wall so that it is flush with the exterior wall. Important: If the wall sleeve is installed into a thick wall it should be recessed 1-1/4", or as required from the face of the exterior brick, so when the louver is installed it is flush with the exterior face of the building. The wall sleeve must protrude into the room a minimum of 1-5/8" (29mm) beyond the finished interior wall surface, to accommodate the heat section and room cabinet. The center of gravity is 10-3/4" (273mm) from the rear face of the standard wall sleeve. If no subbase is being employed, adequate support for the wall sleeve up to the center of gravity must be provided at the job site. This support can be wood, metal or concrete.
3. Level wall sleeve side to side and pitch to outside 1/8"/ft. to assure proper sleeve drainage to outside. Anchor with appropriate fasteners using holes provided (see Figure 13 on page 11), or drill additional holes as required to secure firmly.

⚠ CAUTION

Do not drill holes in the base of the wall sleeve. Use shims between the wall and the wall sleeve to prevent wall sleeve distortion during anchoring.

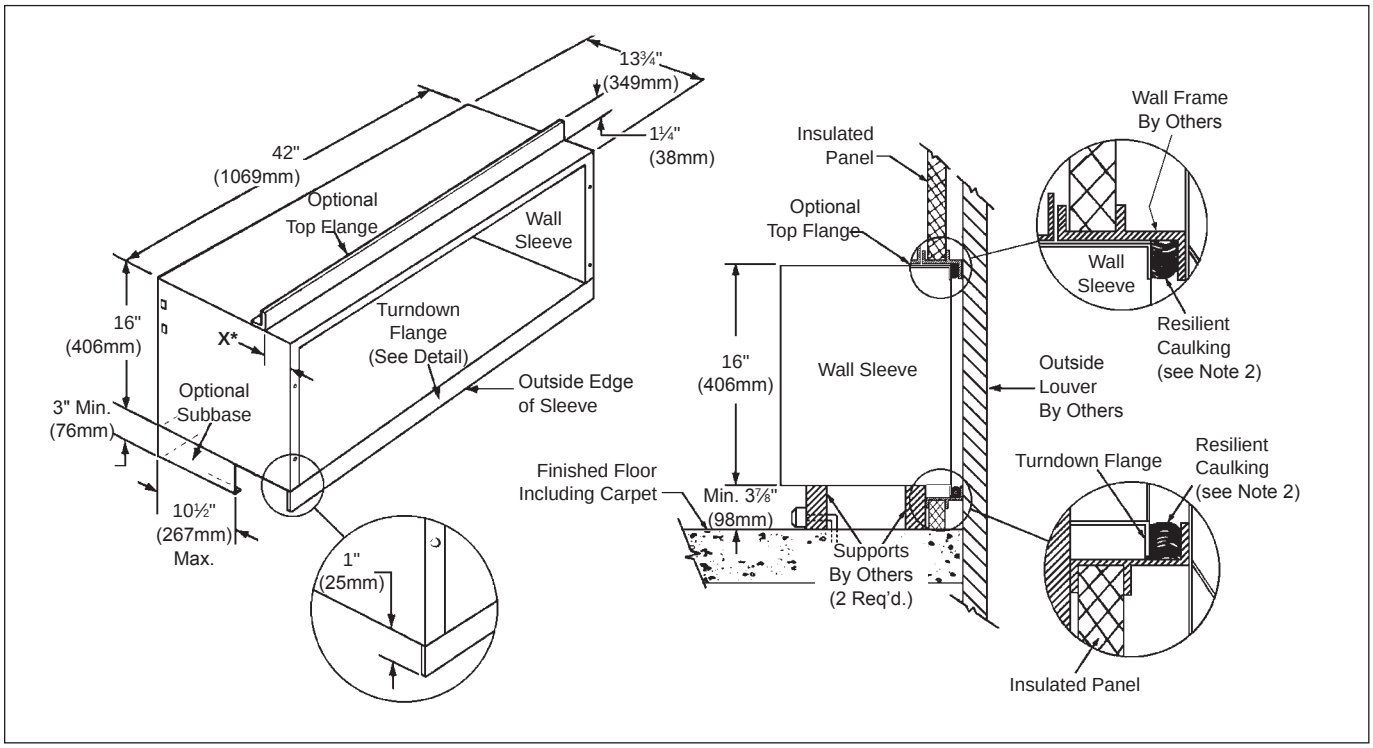
4. Caulk the wall sleeve to the wall opening on both the inside and outside perimeter. This can be done from the inside of the building. Be careful not to plug the weep holes.

Figure 9: 16" x 42" optional recessed louver wall sleeve with continuous flange and drip edge



Notes: *1. Caulk entire perimeter of wall sleeve after installation.*
2. Seal area between louver and wall sleeve to prevent condenser air recirculation.
*** See "Table 1: Cabinet & wall sleeve dimensions" on page 5 for dimension "D".*
** Dimension "X" is field determined or specified. Flange is factory welded at given dimension when option is designated.*

Figure 10: Wall sleeve installation using top angles and field supplied louver



Notes: *1. Caulk entire perimeter of wall sleeve after installation.*
2. Seal area between louver and wall sleeve to prevent condenser air recirculation.
3. Dimensions shown in Table 1 page 5 do not apply to this application.
** Dimension "X" is field determined or specified. Flange is factory welded at given dimension when option is designated.*

Thick Wall Construction

A heavy-gauge, corrosion resistant wall sleeve is provided for each unit. The wall sleeve is either shipped in a separate carton or shipped in a multi-pack of 15.

Typical installation for masonry walls is shown in Figure 11. The recommended installation procedure for this type of construction is as follows:

1. Clean the opening of all debris that may interfere with installation.
2. Be sure the unit's center of gravity falls within the load bearing surface of the wall. The center of gravity for the unit is approximately 10-3⁄4" (273mm) from the rear edge of the wall sleeve. If the center of gravity is not within the load bearing surface, then additional support such as wood, metal or concrete must be provided in the field.
3. Place a thin pad of soft mortar on the bottom of the opening. Important: Make certain the wall sleeve protrudes into the room a minimum of 1-5⁄8" (41mm) beyond the finished wall surface to accommodate the heat section and room cabinet. Be sure to recess the wall sleeve enough to accommodate outside louver. This recess is 3/8" (9.5mm) for stamped louvers and 1-1⁄4" (32mm) for architectural louvers. The louver should be flush to exterior surface when completed.
4. If a brickstop is employed (as shown in Figure 12), slide the wall sleeve into the wall until the brickstop contacts the exterior bricks, as illustrated below. If a brickstop is not used, slide the wall sleeve in the wall so that it extends into the room a minimum of 1-5⁄8" (41mm) beyond the finished interior wall surface. This allows room to attach the heat section and room cabinet. The wall sleeve should also be recessed enough to accommodate the outside louver. Level wall sleeve side to side and pitch to outside 1/8"/ft. to assure proper sleeve drainage to outside.
5. After the mortar has dried, remove the masonry support from the wall sleeve. Note: The wall sleeve is not intended to replace the lintel.
6. Anchor with appropriate fasteners (as shown in Figure 13 on page 11). A 5/16" (8mm) hole is provided on each side, 2" (51mm) down from the top and 2" (51mm) in from the rear of the wall sleeve. It may necessary to drill additional holes in the wall sleeve to firmly secure it.
7. Caulk the wall sleeve to the wall opening on both the inside and outside perimeter using a resilient, non-hardening caulk such as silicone. Be careful not to plug the weep holes.

Figure 11: Wall sleeve installation using brickstops

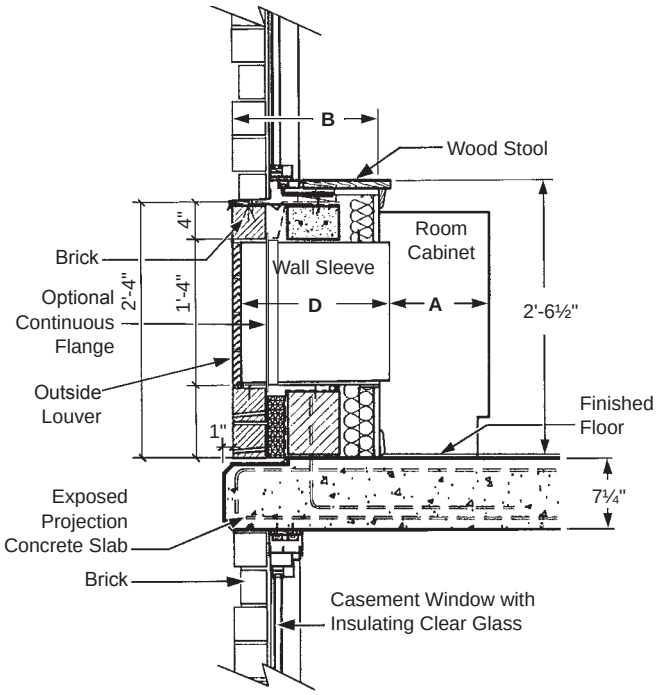
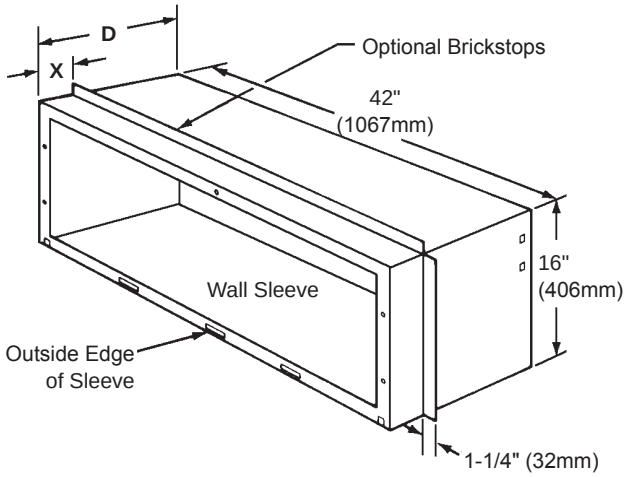


Figure 12: Standard 16" x 42" wall sleeve with brick stop



Notes: *1. For dimensions **B** and **D**, see Table 1 on page 5.*

*2. Dimension "**X**" is "as required" and is usually sent to the factory to be welded during wall sleeve fabrication.*

3. Caulk entire perimeter of wall sleeve after installation.

4. Wall sleeve to extend 1-5/8" past the interior finished sheetrock.

5. Wall sleeve should be installed recessed 1-1/4", or as required from face of brick so that when louver is installed it is flush with face of building.

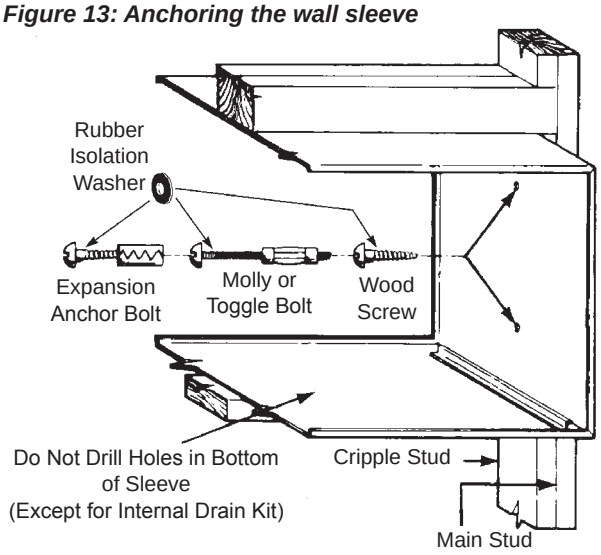
Anchoring The Wall Sleeve

7. Anchoring the wall sleeve is accomplished as shown in Figure 13. Use the rubber isolation washers with the fasteners to minimize sound transmission from the equipment to the wall, at the point of contact. A 5⁄16" (8mm) hole is provided on each side, 2" (51mm) down from the top and 2" (51mm) in from the rear of the wall sleeve. It may be necessary to drill additional holes in the wall sleeve to firmly secure it.

⚠ CAUTION

Do not drill holes in the base of the wall sleeve. Use shims between the wall and the wall sleeve to prevent wall sleeve distortion during anchoring.

Figure 13: Anchoring the wall sleeve


Rubber Isolation Washer
Expansion Anchor Bolt
Molly or Toggle Bolt
Wood Screw
Do Not Drill Holes in Bottom of Sleeve (Except for Internal Drain Kit)
Cripple Stud
Main Stud

***Note:** All anchoring hardware field supplied*

Installing The Hydronic Heat Section

1. The heat section is designed to be "snapped" into the top of the wall sleeve (Figure 15). There are four square holes provided in the wall sleeve, two on each side, for coil attachment. To Assemble the heat section to the wall sleeve:
2. Unpack the heat section and inspect for any shipping damage. Report any damage found to the carrier.
3. Check the heat section against the plans to make certain the coil supplied has the connections that match the specifications.
4. Attach the provided hydronic coil blockoff plate to the under side of the hydronic heat section with the two (2) screws as shown in Figure 14.
5. Firmly attach the heat section to the wall sleeve by lining up the heat section hooks with the square holes supplied in the wall sleeve. Snap the heat section in place by exerting pressure downward. See Figure 15.

⚠ WARNING

The hydronic coil blockoff plate must be installed to prevent discharge air from bypassing the hydronic coil, resulting in loss of efficiency.

Figure 14: Attach hydronic coil blockoff plate

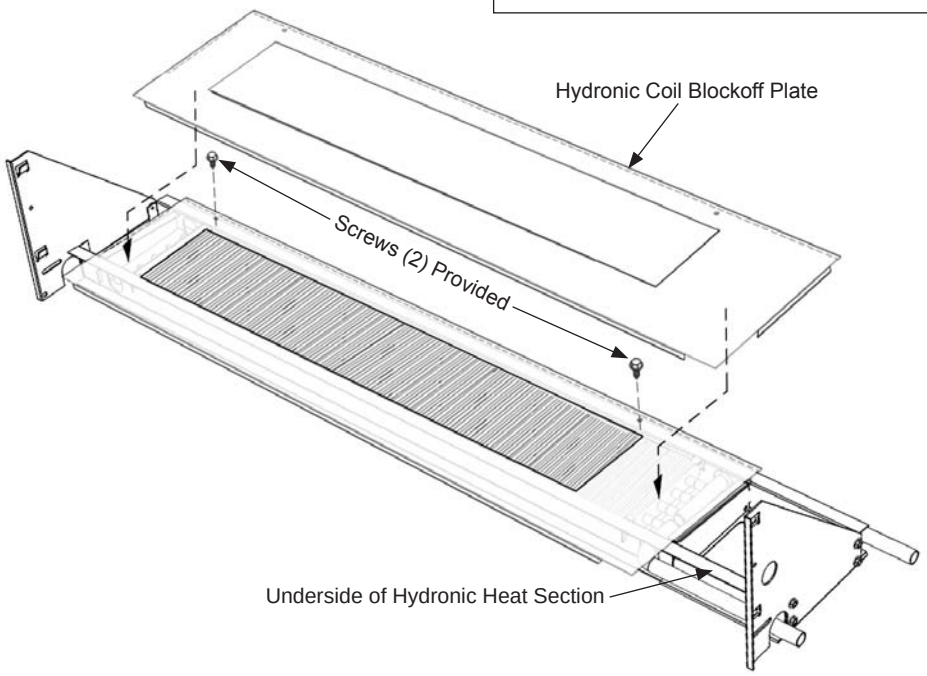
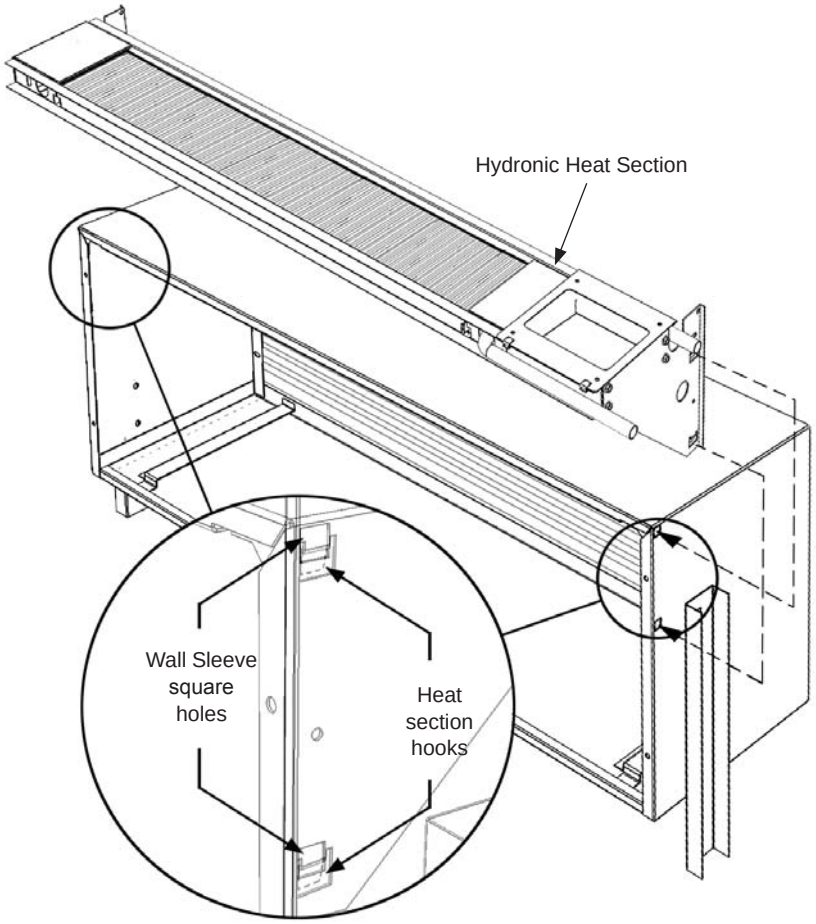


Figure 15: Attach hydronic heat section to wall sleeve



Piping

Recommended Piping Detail (Field-Installed)

Figure 16: Typical hot water coil piping

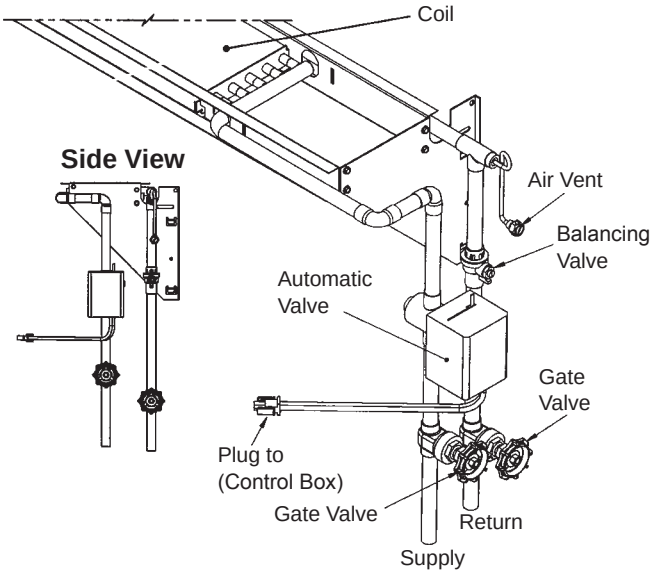
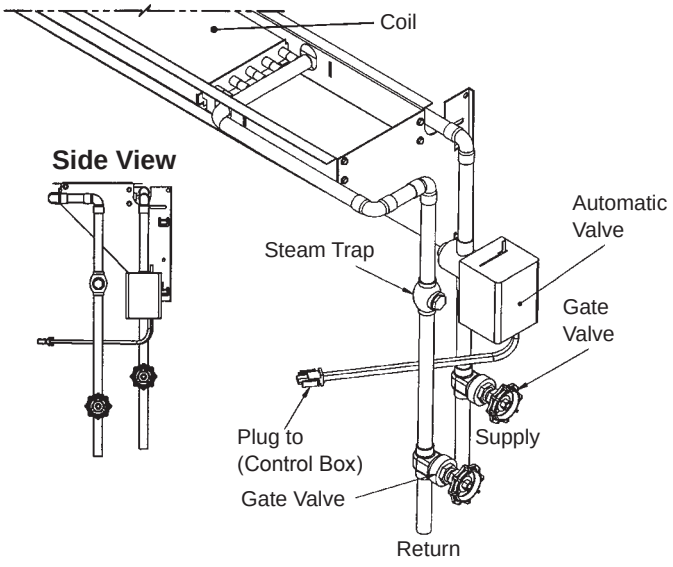


Figure 17: Typical steam coil piping

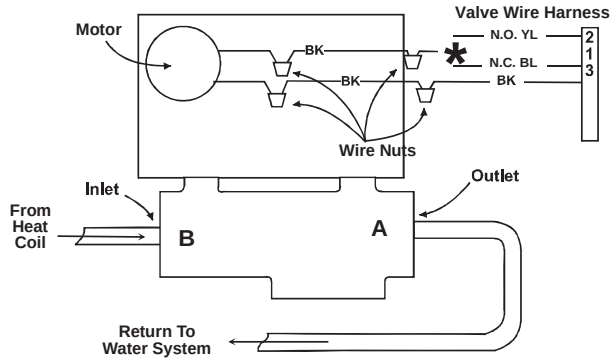


Installing The Valve

Prior to soldering the normally closed two-way valve, open the ports by slowly moving the manual operating lever to the retaining notch until lever is secured by valve spring. The lever will reset to the automatic position the first time the valve is energized.

Note: *When installing two-way valves, the flow direction is from end "B" as shown in Figure 18.*

Figure 18: 2-way valve installation



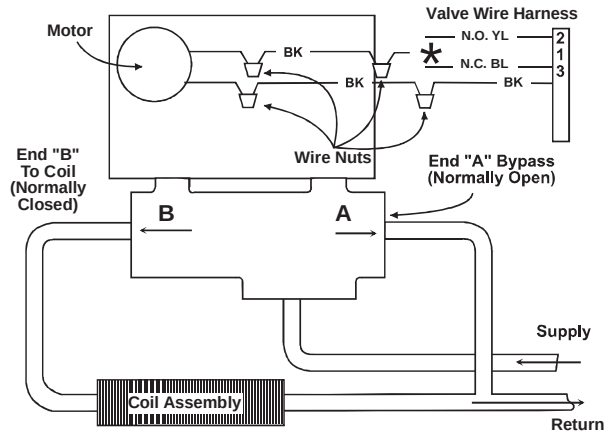
*** Connect YL for Normally Open Valves.**
Connect BL for Normally Closed Valves

Prior to soldering the normally closed 3-way valve, open both ports by slowly moving manual operating lever to retaining notch until lever is secured by valve spring.

Flow valve and tubing is to be installed so that it does not restrict removal of the chassis from the sleeve for service.

Note: *When installing three-way diverting valves and normally closed is required, end "B" is the supply to coil and end "A" is the bypass end. The inlet port is unmarked. Port markings "A" and "B" are located on the bottom of the valve body (Figure 19).*

Figure 19: 3-way valve installation



*** Connect YL for Normally Open Valves.**
Connect BL for Normally Closed Valves

Note: *For Erie Model VT32* (pop top), the three-way valve is only configured as N.C. to "B" port. For N.O. configuration to the coil, simply turn the valve around.*

Procedure

1. The valve is always connected to the supply side of the coil. See Figure 16 and Figure 17 on page 12. There are seven possible coil arrangements available. Each is shown in Figure 20 through Figure 26 on page 14. Select the illustration that matches the coil supplied, and pipe it according to the illustration. Install valve and other accessories including air vents, steam traps, stop balance valves, etc., as specified by the design engineer.
2. For valve installed on right side of the unit, make electrical connection to matching cap extending from the control box. For left side valve, make electrical connection to cap mounted to left side of chassis.

Note: *1. When the heating medium is steam, the supply connection should be attached to the uppermost tube and the return to the lower tube. The coil is pitched in the casing to allow drainage of condensate.*

2. When the heating medium is hot water, the supply connection should be made to the lowermost tube and the return to the uppermost tube. Hot water coils should be "flooded" to minimize air entrapment.

Valve Wiring

If the black valve motor leads are not accessible from the valve housing, remove the valve cover.

1. Connect the factory supplied valve wire harness leads to the two valve motor leads (not the end switch leads) using the supplied wire nuts (Figure 18).

Note: The fiber washer and strain relief supplied with the valve harness must be located in the valve motor enclosure after assembly.

2. Using the two remaining wire nuts, connect the wires from the chassis wire harness to valve harness.
3. Connect one of the BK wires from the valve to BK wire from the chassis.
   - For normally open valves, connect the YL chassis harness wire to the second BK wire from the valve.
   - For normally closed valves, connect the BL chassis harness wire to the second BK wire from the valve.
4. Cut either the YL or BL wire that is not being used at the plastic male connector on the control panel.
5. The Heat Fan Lockout (HFLO) must be installed on the return piping of the hot water coil and after the steam trap for steam heat units. The Factory provides a thermistor sensor to be attached to the piping with a cable tie.
6. Replace the valve cover.

Supply and Return Coil Arrangements

Steam

Figure 20: Left-hand supply and return

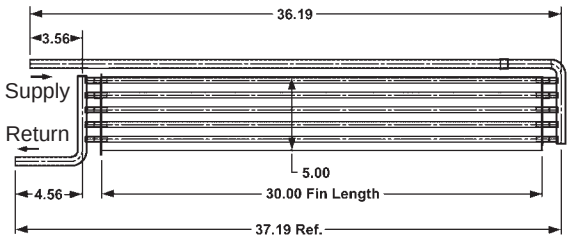


Figure 21: Right-hand supply and return

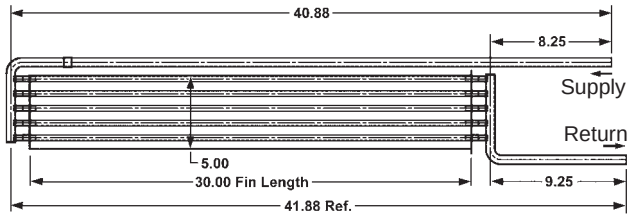


Figure 22: Right-hand supply, left-hand return

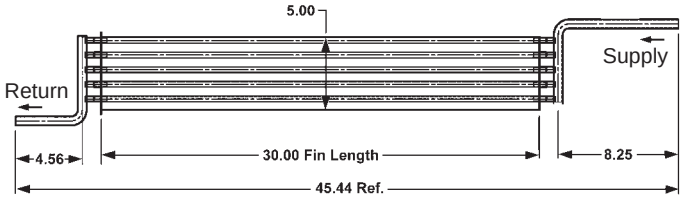
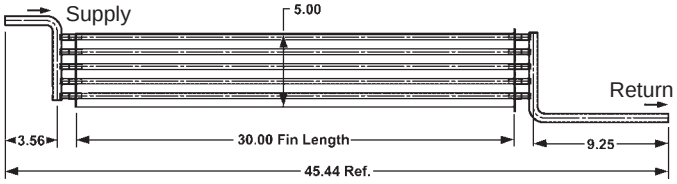


Figure 23: Left-hand supply, right-hand return



Hot Water

Figure 24: Left-hand supply and return

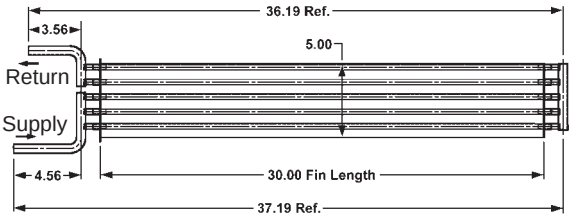


Figure 25: Right-hand supply and return

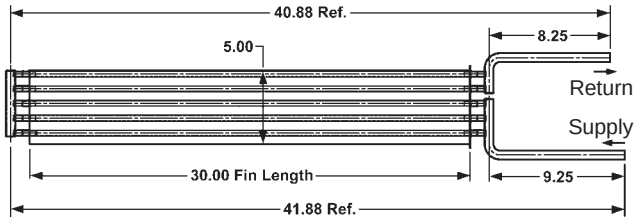
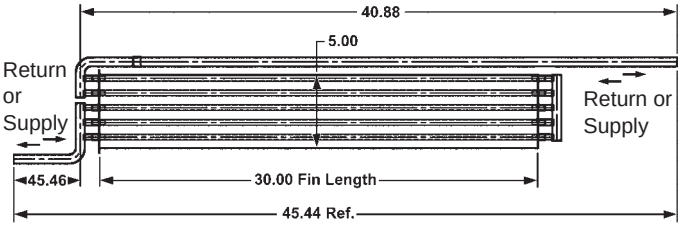


Figure 26: Left-hand supply, right-hand return or Right-hand supply, left-hand return



Installing Cooling Chassis

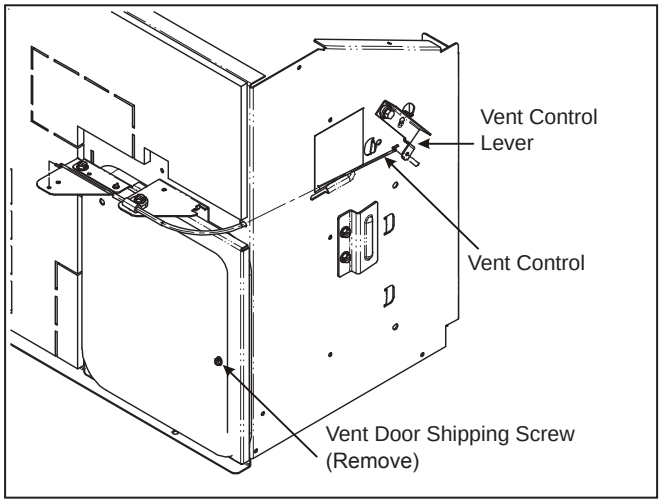
Correct installation of the cooling chassis is extremely important to insure the proper operation of the unit. Install the chassis as follows:

⚠ CAUTION

Do not pull on evaporator fan housing, control box or compressor. Do not lift by pulling on the tubing. Tubing can crack or bend damaging the unit.

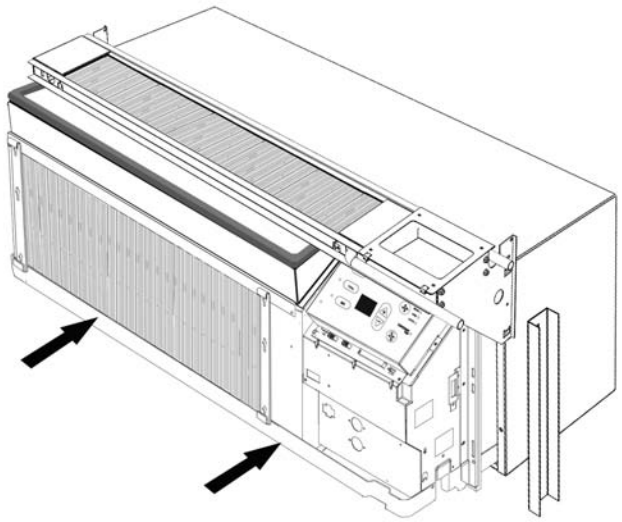
1. Remove outer carton and inspect for any shipping damage. Report any found to the carrier.
2. Check nameplate data on chassis to insure that the correct job site distribution has been made with respect to cooling capacities. Generally, corner rooms require larger capacities.
3. Remove chassis from carton by pulling evenly on substantial portion of unit.
4. If wall sleeve has been previously installed, remove temporary weather panel.
5. Check all fasteners to make certain they have not come loose during shipment. Do not loosen bolts holding down compressor; they are set at the factory.
6. If the Vent Door shipping screw was not previously removed, remove it now.

Figure 27: Remove the shipping screw holding the vent door



7. Do not lubricate motors before start-up. Motors are permanently lubricated.
8. Place Tinnerman clips from bag onto wall sleeve. Clips and mounting screws are enclosed in a bag attached to the top of the condenser coil housing.
9. If louver has not been previously installed, connect to wall sleeve as described above.
10. If louver is supplied by others, as illustrated in Figure 10 on page 9, be sure to install foam type gaskets on all sides of the condenser coil to prevent recirculation or bypass of condenser air.
11. Slide chassis into wall sleeve until firmly seated against weather seals of wall sleeve.

Figure 28: Slide chassis into wall sleeve

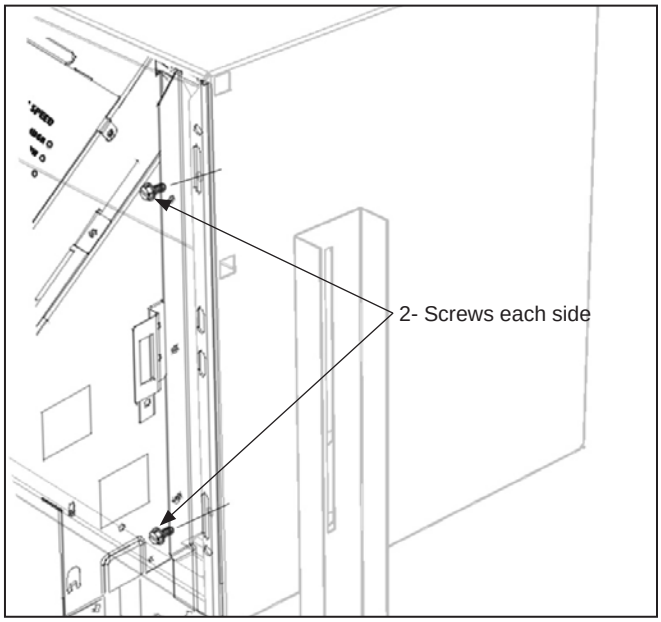


⚠ CAUTION

Do not push on coil surface or control box cover. Make sure the compressor tubing does not catch when inserting chassis.

12. Secure chassis to wall sleeve with four (4) sheet metal screws (2- each side), packaged with the Tinnerman clips.

Figure 29: Secure chassis to wall sleeve



Electrical Service

All wiring should be in accordance with all local and National Electrical Code requirements.

Units are supplied with an attachment cord and plug which exit from the bottom of the conditioner on the control side. The cord for 115V, 208V and 230V has a usable length of 64" (1626 mm) from where it exits the conditioner.

Table 13: Voltage measurements

Operating Voltage		
Unit Voltage	Voltage Utilization Range	
Rating	Minimum	Maximum
230/208	197	253
265	238	292
115	103.5	126.5

Note: *The use of extension cords to increase the length of the plug/cord set is not recommended.*

The attachment plug size should be used to determine the circuit ampacity and overcurrent protection. Time delay, overcurrent protection devices are recommended to prevent unit damage and to avoid nuisance tripping.

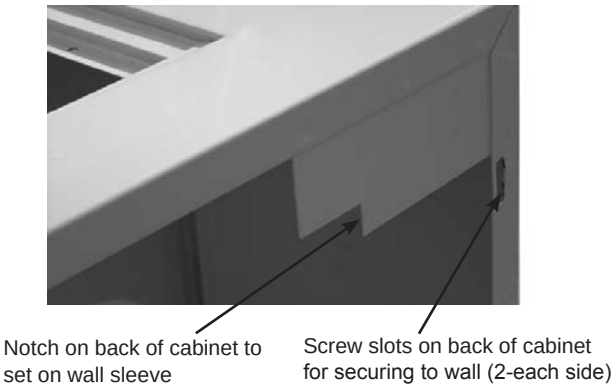
Outlets are generally located beneath the conditioner, on or recessed in the wall so it is concealed by the conditioner overhang and kickplate.

Installing Room Cabinet

The room cabinet is the last piece to install. The following instructions assume all components (wall sleeve, heat section, louver and chassis) have been installed, piped and anchored. All major room construction should also be complete so as not to damage the room cabinet after it has been installed. Attaching the room cabinet can be completed as follows:

1. Firmly grasp the room cabinet and lift it over the heat section. There are notches in the back flanges of the room cabinet that rest on the wall sleeve to assure it is centered.
2. Align the notches of the room cabinet on the wall sleeve and firmly push the cabinet downward until it seats on the wall sleeve (see Figure 30).

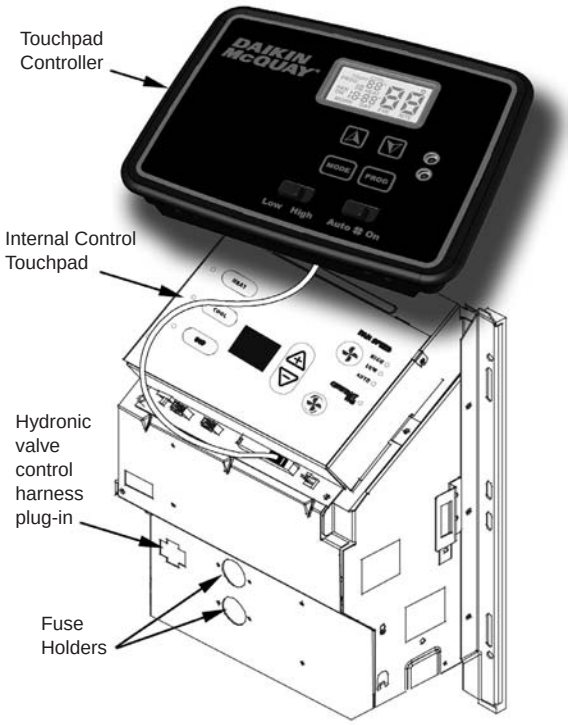
Figure 30: Room cabinet detail



3. Screw the cabinet to the wall using the screws provided. There are two (2) screw holes provided on each side located on the inner flanges of the room cabinet.
4. Loosen the four (4) wing nuts on the kickplate and adjust the kickplate the required distance to the floor.
5. Tighten the wing nuts firmly.
6. Wipe any smudges or dirt off the room cabinet using a mild cleaner and a soft cloth.
6. Plug-in the power cord. Coil-up excess cord and store in the conditioner.

Installing The Touchpad Control

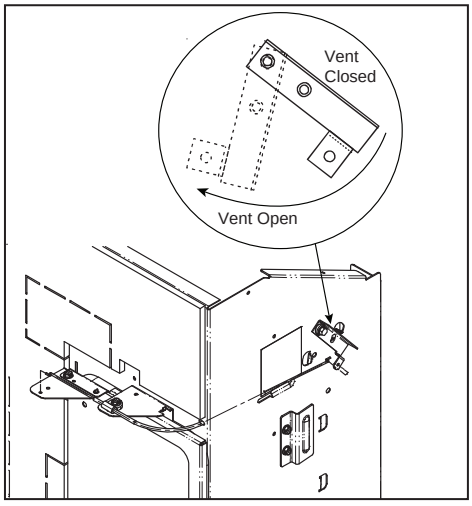
Figure 31: Touchpad installation



Prior To Start-Up Checklist

- ☐ Internal controller is configured at the factory, see "Configuration Settings for Internal Control Touchpad" on page 20 if required.
- ☐ Plug touchpad unit controller into internal control board terminal strip marked, "Remote Thermostat". See Figure 33 on page 19.
- ☐ Install return air thermistor probe into pre-installed clip on base pan.
- ☐ Uncoil Heat Fan Lockout Sensor wire and install probe on water/steam coil return line with provided cable tie.
- ☐ Set the Manual Vent Control (if equipped) to the desired position (open or closed) (Figure 32).

Figure 32: Manual vent control



Unit-Mounted Controller & Remote Thermostats

Programmable Electronic Thermostat (P/N 910140679)

7-Day Programmable, Auto Changeover, Fan Speed Control, Hardwired

- 7-Day Programmable
- Single Stage Heat Pump/Non-Heat Pump Systems
- Backlit Display
- Single Stage Heat/Cool Systems
- Field Calibration
- Auto Changeover
- Button Lockout Function
- Two Speed Fan Control
- SimpleSet™ Programming
- Remote Temperature Sensor Capability
- Title 24 Compliant / No Batteries Required
- Relay Outputs (minimum voltage drop in thermostat)
- Ideally Suited for:
  - Residential (New Construction/Replacement)
  - Light Commercial

Specifications

Electrical rating:

- 24 VAC (18-30 VAC)
- 1 amp maximum per terminal
- 3 amp maximum total load

Temperature control range:

45°F to 90°F (7°C to 32°C) Accuracy: ± 1°F (± 0.5°C)

System configurations:

1-stage heat, 1-stage cool, heat pump

Timing:

Anti-short Cycle: 5 minutes

Backlight Operation: 10 seconds

Terminations:

C, RH, RC, W, Y, B, O GL, GH, S1, S2

For detailed installation, operation and application refer to Operation & Application Guide LIAF186

Non-Programmable Electronic Thermostat (P/N 910140678)

Non-Programmable, Auto Changeover, Fan Speed Control, Hardwired

- Single Stage Heat Pump/Non-Heat Pump Systems
- Backlit Display
- Single Stage Heat/Cool Systems
- Field Calibration
- Auto Changeover
- Button Lockout Function
- Two Speed Fan Control
- Remote Temperature Sensor Capability
- Title 24 Compliant / No Batteries Required
- Relay Outputs (minimum voltage drop in thermostat)
- Ideally Suited for:
  - Residential (New Construction/Replacement)
  - Light Commercial

Specifications

Electrical rating:

- 24 VAC (18-30 VAC)
- 1 amp maximum per terminal
- 3 amp maximum total load

Temperature control range:

45°F to 90°F (7°C to 32°C) Accuracy: ± 1°F (± 0.5°C)

System configurations:

1-stage heat, 1-stage cool, heat pump

Timing:

Anti-short Cycle: 5 minutes
Backlight Operation: 10 seconds

Terminations:

C, RH, RC, W, Y, B, O GL, GH, S1, S2

For detailed installation, operation and application refer to Operation & Application Guide LIAF187

Operating Instructions

Cooling or Heating – Manual Operation

The PGAN unit controller has built-in features such as random start, compressor time delay, night setback, load shed, shutdown. The 24 volt low voltage terminal strip is set so R-G energizes the fan. R-W1 energizes the fan and compressor.

User Controls

A 4 button touch key pad, with a High/Low Fan speed and Auto/On Switch located behind the control door, controls both temperature and operation mode.

Thermostat Setting

4-button touchpad with display.

Pressing the COOL thermostat control and the up or down arrows will provide a cooler room temperature. Pressing the HEAT thermostat control and the up or down arrow keys will provide a warmer room temperature.

LCDI Power Cord

230/208V and 115V units are equipped with a LCDI power cord and can open the electrical circuit to the unit. In the event the unit does not operate, check the reset button located on or near the head of the power cord as part of the normal troubleshooting procedure.

Fan Speed

The fan speed selector switch will deliver high, low or auto fan speed to circulate room air.

Note: *The AUTO selection will not be available if a fan speed is selected without COOL or Heat selection.*

Fan Operation HIGH or LOW with HEAT or COOL mode selected

- The fan shall run in the selected speed.
- Fan Operation AUTO with HEAT or COOL mode selected - The fan will run in low and high speed. The changes in fan speed are automatic.

Diagnostic Light - Internal Touchpad

The green diagnostic light located in the lower left hand corner of the touchpad and indicates operation warnings. This light usually indicates that either the filter or coils need cleaning.

Please refer to the "Monthly Maintenance and Cleaning" on page 24 section for the proper cleaning procedure. If this light is still on after cleaning, please refer to the "Diagnostic Maintenance & Status Report - Internal Control Touchpad" on page 22 section for assistance.

Master Switch

The master switch disconnects power to all of the system components. When this switch is in the off position, the compressor, fan motor, reversing valve, and electric resistance heater will all be de-energized.

Remote Thermostats

NOTICE

When using existing thermostats by others;

There are two basic types of thermostats manufactured today; those with relay contacts, and those with solid-state triacs. If you open the thermostat and don't see relays then you can assume it to be solid state.

Manufacturers of solid state output thermostats include loading resistors on their installation kits. These are of low Ohm value, approximately 560 Ohm and 3W. The resistors are meant to load the thermostat outputs in order for the output voltage to be either 0 or 24VAC, i.e. no floating voltage. These resistors are connected from W, Y, G to common (C), respectively. Therefore, if you are using existing solid-state thermostats, you may have to add loading resistors for your PTAC controls to work properly. McQuay thermostats do not require this modification.

To operate this unit with a “manufacturer-approved” remote thermostat, configure the control to be operated by the remote thermostat. Enter configuration mode C1 and then select option Code L5 (see Configuration Settings, Table 15). When in the remote mode, the unit will only respond to the thermostat inputs (terminal strip positions GL (or GH), W2, Y/W1, and B* shown in “Control Board User Inputs” illustration).

Notes: *Once configuration C1 with option code L5 has been selected, the control touchpad will no longer accept inputs other than configuration and diagnostics modes. The room occupant must operate the unit at the remote mounted thermostat.*

In remote mode, the 3-minute compressor time delay, the random restart feature and the freeze protection feature are all active (see Unit Features section). When remote wall-mounted thermostat is used, the delay may be a total of 8-minutes.

Thermostat Location

This unit is designed to be operated with remote wall mounted thermostats. For further information on thermostats approved for use with this unit, contact your sales representative.

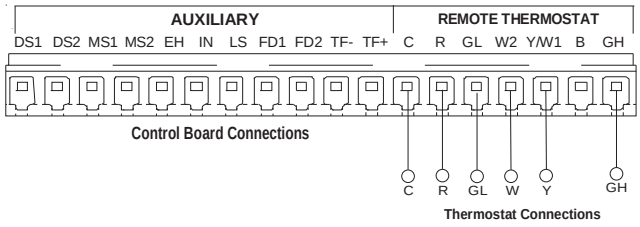
For best performance results, the thermostat should be located approximately five feet above the floor on a vibration free, inside wall in an area with good air circulation.

Do not install the thermostat where it may be affected by the following:

- Dead spots behind doors, in corners or under cabinets
- Hot or cold drafts from air ducts
- Radiant heat from the sun, appliances, or fireplaces
- Concealed pipes and chimneys
- Unheated (uncooled) areas behind the thermostat, such as an outside walls

Consult the instruction sheet packaged with the thermostat for further details on mounting and operation.

Figure 33: Internal Control Board - Remote Control Terminations


AUXILIARY
REMOTE THERMOSTAT
DS1 DS2 MS1 MS2 EH IN LS FD1 FD2 TF- TF+ C R GL W2 Y/W1 B GH
Control Board Connections
C R GL W Y GH
Thermostat Connections

Remote Thermostat Operation

Approved thermostats vary slightly in construction and, with few exceptions, are operated similarly. The following operational description pertains to approved non-programmable thermostats that energize G in Heat and Cool mode.

Heat/Off/Cool Switch

- **OFF** - cooling and heating functions are defeated.
- **HEAT** - the selected room temperature is maintained by cycling the hydronic control valve.
- **COOL** - the selected room temperature is maintained by cycling the air conditioner.

Table 14: Maximum Wire Length for Remote Control Connection

Maximum Wire Length	
Wire Size (AWG)	**Maximum Length Allowed**
#24	400 ft.
#22	600 ft.
#20	900 ft.
#18	1500 ft.
#16	2000 ft.

Non-Programmable Thermostat Specs

Manual Changeover One-Stage Heat and Cool or One-Stage Heat Pump

Part No. 910116771 (1-Pk, White with Wall Plate)

Simple to operate, single push button for one-stage heating and cooling, or single stage heat pump. Zone compatible and 4- or 5 wire compatible (terminal "C" is optional for non-heat pump systems). System "heat-off-cool" switch and fan "on-off" switch.

Specifications

Electrical Rating:

- 24 VAC (18 to 30 VAC)
- 1 amp maximum per terminal
- 3 amp maximum total load
- 30-minute power loss memory retention

Temperature Control Ranges:

- 45°F to 90°F, Accuracy: ± 1°F

System Configurations:

- 1 stage heat, 1 stage cool or single stage electric heat pump

Terminations:

- R, C, W, Y, O, B, G

Wall-Mounted, 7, 5-2 & 5-1-1 Programmable Thermostat Specs

Manual Changeover One-Stage Heat and Cool or One-Stage Heat Pump

Part No. 910116772 (1-Pk, White with Wall Plate)

Specifications

Electrical Rating:

- 24 VAC (18 to 30 VAC)
- 1 amp maximum per terminal
- 3 amp maximum total load
- 30-minute power loss memory retention
- Easy access terminal block

Temperature Control Ranges:

- 45°F to 90°F, Accuracy: ± 1°F

System Configurations:

- 1 stage heat, 1 stage cool or single stage electric heat pump

Terminations:

- RC, RH, C, W, Y, O, B, G

Standard Auto or Manual-Changeover Two-Stage Heat/ Two-Stage Cool Specs

Part No. 910116774 (1-Pk, White with Wall Plate)

Specifications

Electrical Rating:

- 24 VAC (18 to 30 VAC)
- 1 amp maximum per terminal
- 4 amp maximum total load
- 30-minute power loss memory retention
- Easy access terminal block

Temperature Control Ranges:

- 45°F to 90ºF, Accuracy: ± 1°F

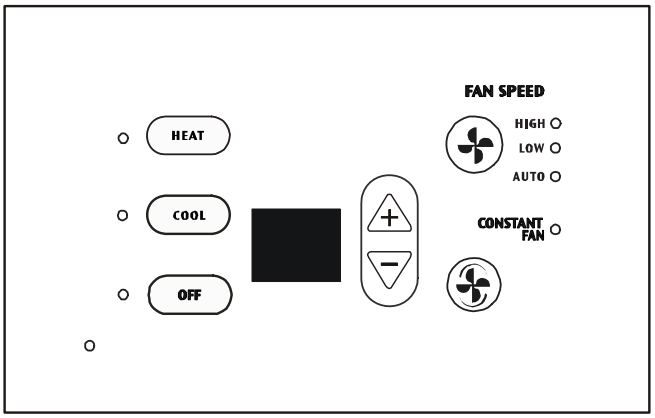
System Configurations:

- Single or two-stage heat/cool
- Single or two-stage heat pump

Terminations:

- R, C, W1/O/B, Y1, W2, Y2, G

Configuration Settings for Internal Control Touchpad



7-Button Touchpad with Display

The control can be configured to operate a wide range of options. The options listed below with the * are the factory default settings. If these are acceptable, then the unit does not require any additional configuration and is fully operable. To configure the unit, first select the configuration feature code setting and then an option code to change from the factory default setting.

The Internal Control Board must be set up for Remote Thermostat Operation, configuration mode "C-1" and Option code "L-5, as the Daikin Touchpad controller is connected to the "Remote Thermostat" terminals on the Internal Control Board.

To enter configuration feature mode:

1. Press and hold the up and down arrow keys at the same time and press the OFF key twice within a two (2) second time frame. The display will indicate - -., and then release the key and press the key one time. The display will then alternate between C1 and 0.

   To select a different configuration feature code, press the HEAT key until the desired configuration comes up. To scroll to a previously viewed configuration codes press the COOL key.

   Once you have scrolled to the correct feature, then to select the option code for your desired configuration, press either the up or down key to scroll through the options of the selected feature code.

To exit configuration mode:

1. Press the OFF key. Configuration feature mode will also exit if no keys are pressed for a period of two (2) minutes.

Table 15: Internal control touchpad configuration settings

Configuration Code	Description	Option Code	Description
C1	Interface	0*	Chassis Membrane
		rE	Wireless Remote
		L5	Wired Thermostat
C2	Fan Operation	bP	Button present
		bA*	7-button, reverts to cyclic
		A	Always run fan (even in Off)
		bC	7-button, reverts to continuous
C3	Reverse Cycle Operation	C	Cooler Only
		H*	Heat Pump*
		0	Service No Operation "Eo"
C4	Room I.D. Digit 1 & 2	00* - 99	00* - 99
C5	Room I.D. Digit 3 & 4	00* - 99	00* - 99
C6	Wired or Wireless Occupancy	0*	Off*
		1	On
		18	18 Hour Automatic Entry
C8	Temp. Limiting Cool	60* - 72	60* - 72
C9	Temp. Limiting Heat	68 - 90, 80*	68 - 90, 80*
Cd	English / Metric Temp	F*	Fahrenheit Scale*
		C	Celsius Scale
d6	Sensorless Un-Occ. Time	1 - 32, 18*	1 - 32, 18*
d7	1st Un-Occ. Set Back Temp.	1 - 16, 2*	1 - 16, 2*
d8	1st Un-Occ. Set Back Time	.1, .5*, 1 - 24	.1 ,.5 ,1 - 24, .5*
d9	2nd Un-Occ. Set Back Temp.	1 - 16, 3*	1 - 16, 3*
dA	2nd Un-Occ. Set Back Time	.1, .5, 1* - 24	(d8) - 24, 1*
db	3rd Un-Occ. Set Back Temp.	1 - 16, 6*	1 - 16, 6*
dC	3rd Un-Occ. Set Back Time	.1, .5, 1 - 24, 3*	(dA) - 24, 3*
dF	Jace Group Code	00* - 99	00* - 99
r4	Room Prefix	00* - 99	00* - 99
r4	Room Suffix	00* - 99	00* - 99
r5	Room Suffix	00* - 99	00* - 99

Note: ** Indicates factory default (See manufacturer for additional configuration options.)*

Diagnostic Maintenance & Status Report - Internal Control Touchpad

The Diagnostic Maintenance & Status Report on the Internal Control Touchpad provides detailed information on PTAC control operation and operational status including present modes, failures, airflow restriction warnings, operating temperatures, and past failures. The lower right hand dot on the center display flashes in this mode. In some cases the green LED located in the lower left hand corner of the touchpad below the OFF key will also be lit. This Green LED "Status Light" only illuminates if there is an status code that has been activated and should be reviewed. In most cases, this light indicates that the indoor room filter is dirty should be cleaned or replaced.

Note: *Dirty filters cause the unit to consume more energy than normally needed to condition a room.*

Once the filter has been cleaned or replaced, the LED should go out. If the LED is still illuminated after the filter has been cleaned, activate the Diagnostic and Status mode to view any active codes.

The unit may need additional cleaning or maintenance of the evaporator or condenser coils. Please perform this step before calling a servicer. A servicer should be called only if cleaning the filter or coils does not clear the status code or the code indicates that servicer should be called.

Diagnostic Status Report Mode

To enter Diagnostic Status Report mode, press and hold the up and down arrows and, while holding, quickly press the COOL key twice.

Active Failures

- If there are no active failures or lockouts, the display will show a double dash, "- -". If there is a code listed, see the unit "Diagnostic Codes" chart for a list of definitions.

Operating Temperatures

- If not in Diagnostic Status Report Mode, enter as instructed above and press the Fan Speed key.
- If already in Diagnostic Status Report mode, press the Fan Speed key. The display will show the temperature of the desired set point, SP; the temperature at the wireless thermostat, rL; the indoor ambient temperature behind the filter, IA; the indoor coil temperature, IC; the indoor discharge air temperature, Id; the outdoor coil temperature, OC; the outdoor ambient temperature, OA; and the spare probe temperature, IH. If any of the probes are not populated the display will show the corresponding failure code.

Past Failure Log

- If not in Diagnostic Status Report Mode, enter as instructed above and press the Fan Speed key twice.
- If already in Diagnostic Status Report mode, press the Fan Speed key. While the display is showing operating temperatures, the last 10 failure codes active or past can be requested by pressing the Fan Speed key again. The codes are displayed last entry first followed subsequently by each preceding code.

Note: *Modes F1 and Fd are also displayed in the normal control operation (see "Diagnostic Codes"chart).*

To exit Diagnostic Status Report mode, press the OFF key.

Clearance Check

Clearances around the unit should also be checked to make sure that the intake air and discharge air paths have not become blocked or restricted. A minimum of eight inches clearance is needed from unit to furniture, beds, or other objects for proper operation. Restricted discharge or intake air will reduce the unit's operational performance. In severe airflow restrictions damage can occur to unit components such as the compressor, electric heater or fan motor.

Obtaining Service

In the event this unit requires repair or servicing beyond what is covered in this manual, contact an authorized service organization.

To obtain an authorized servicer, contact your Daikin sales representative or agency.

Normal Operating Sounds and Conditions

Water trickling sounds

- Water is picked up and distributed over the coil. This improves the efficiency and helps with water removal.

Water dripping

- Water will collect in the base pan during high humidity days.

  This can cause overflow and drip from the outside of the unit.

Air sounds

- The fan cycle switch sets the operational mode of the fan in the ON position. The fan will run continuously whenever power is applied in this mode. In the AUTO position, the fan will cycle on and off with the compressor or electric heater.

Starting delay

- You may notice a few minutes delay in the starting if you try to restart the unit too soon after turning it off or if you adjust the thermostat right after the compressor has shut off. This is due to a built in delay to protect the compressor.

Table 16: Diagnostic codes

Code		Status	Display	Error Light	Suggested Action
Modes	**FP**	Freeze Protection Engaged. The room temperature measured by the wireless remote thermostat or indoor ambient thermistor active sensor falls below 40°F.	Y	N	No Action required. This setting will disengage when the room temperature rises above 43°F.
	Fd	Front Desk switch is closed. All outputs are switched off.	Y	N	Open front desk switch to allow occupant unit operation.
	Eo	Un-Configured Service Board - All operation held awaiting configuration	Y	Y	Enter Configuration Menu and set "C3" to "C" for coolers with electric heat or "H" for heat pumps.
	EH	Emergency Hydronic Engaged. The EHH switch is closed. Compressor is switched off.	Y	N	Open front emergency hydronic switch to allow occupant unit operation.
	LS	Load Shedding Engaged. The LS switch is closed. Compressor and Electric heat is switched off.	Y	N	Open load shedding switch to allow occupant unit operation.
	On	Control is configured to respond to a wired thermostat	Y	N	No action if a wired thermostat is being used. Otherwise, see Configuration Settings.
	oP	Open Door Lockout (DS1 & DS2 open; wireless)	Y	Y	Close Room Door. Unit will not condition space with door open.
	nP	Window Switch Lockout - (LS & INN open)	Y	Y	Close Room Door or Window. Unit will not condition space with door or window open.
	hP	Heat Sentinel - (WIAT > u3)	Y	N	No action required. This setting will disengage when the room temperature falls.
	Ur	Un-Rented Status (EHH & INN or wireless)	Y	N	Front Desk needs to set to Rented mode (if applicable).
Failures	**F1**	Indoor Ambient Thermistor reads outside the range -20°F to 200°F & the wireless thermostat is not communicating to the unit control or Indoor Ambient Thermistor (IAT) without a wireless remote thermostat reads outside the range -20°F to 200°F.	Y	Y	Replace black Indoor Ambient Thermistor or Wireless Remote Thermostat.
	F2	Wireless Remote Thermostat failure	N	N	Replace Wireless Thermostat.
	F3	Indoor Ambient Thermistor reads outside the range -20°F to 200°F	Y	N	Replace black Indoor Ambient Thermistor.
	F4	Indoor Coil Thermistor either above or below operating tolerances.	N	Y	Replace Red Indoor Coil Thermistor.
	F5	Wireless Thermostat failure	N	Y	Attempt to rebind Wireless Thermostat or Replace Wireless Thermostat.
	F6	Indoor Discharge Thermistor either above or below operating tolerances.	N	Y	Replace Yellow Indoor Discharge Thermistor.
	Fb	Low Remote Battery Warning.	N	Y	Replace Batteries in Wireless Devices.
	H1	High Voltage Protection engaged. Power supply voltage is to high.	Y	N	Check for incoming power at correct voltage.
	br	Brown Out Protection engaged. Power was lost or voltage is low.	N	N	Check for incoming power at correct voltage.
Airflow Alerts	**L6**	Discharge Air Too Hot.	N	Y	Clean Filter or Remove Air Blockage.
	LC	Outdoor Coil Thermistor temperature high.	N	Y	Clean Condenser Coils, Check Fan for fault. Code will reset after cleaning.
	C2	Indoor Air Recirculation. Large delta between thermostat and return.	N	Y	Clean Filter or Remove Air Blockage or Close Vent Door or Improve indoor to outdoor seal.
	C5	Outdoor Coil temperature too high for outdoor ambient temperature.	N	Y	Check for Blocked Outdoor Air or Clean Coil.
Refrigeration Alerts	**C1**	Indoor Coil is freezing up.	N	Y	Clean filter, Check for fan and blower operation, Check for Refrigerant loss or Restricted capillary tube.
	C3	Indoor Coil is freezing up.	N	Y	Clean filter, Check for fan and blower operation, Check for Refrigerant loss or Restricted capillary tube.
	C4	Indoor Coil froze up.	N	Y	Clean filter, Check for fan and blower operation, Check for Refrigerant loss or Restricted capillary tube.
	C6	Poor Unit Performance.	N	Y	Check for blower motor, compressor, or electric heat operation.
	C7	Indoor Freezing Lockout (ICT - IAT > 20) +10 Min.	N	Y	Clean filter, Check for fan and blower operation, Check for Refrigerant loss or Restricted capillary tube.

Monthly Maintenance and Cleaning

Intake Air Filters

To properly maintain the operational performance of your PTAC unit, it is extremely important that the inlet air filters be cleaned once per month or more often if operated in dusty or dirty locations or conditions. The intake air filters are constructed of durable polypropylene. The “air intake” air filters can be easily inserted into the cabinet front using the cabinet filter guides. Before cleaning the intake filter, turn the unit off by setting the mode switch to the OFF position. Filter should be cleaned as required.

Vent Screen

Before cleaning the vent screen, disconnect power to the unit by unplugging the power cord at the wall outlet or subbase, or disconnect power at the fuse box or circuit breaker. If unit is operated with vent door closed, the vent screen does not need to be cleaned.

1. Remove the cabinet front as described in Front Removal.
2. Remove the four screws securing the chassis to the wall sleeve.
3. Slide the chassis out of the wall sleeve far enough so that the vent screen is accessible.
4. Clean the vent screen, slide the chassis back into the wall sleeve, secure it in place with four screws and reinstall the front cabinet.

Cabinet Front

The cabinet front and discharge air grille can be cleaned with a water dampened cloth. Under no circumstances should hydrocarbon- based cleaners (e.g. acetone, benzene, naphtha gasoline, etc.) or ammonia based cleaners be used to clean the front or air grilles. Use care when cleaning the control area.

Yearly Maintenance and Cleaning

Note: *Use a mild biodegradable detergent such as Simple Green™ when cleaning the unit. Special care must be taken to protect the unit’s control board and other electrical components from getting any water on them while cleaning. The use of harsh or caustic cleaning agents or materials such as bleach or coil cleaners that are not designed for PTAC products will cause damage or deterioration of the aluminum fin or coil material and is not recommended. Care must be taken not to bend the aluminum fin stock.*

Routine Scheduled Maintenance

To achieve continuing top performance and high efficiency, establish a “once a year” cleaning/inspection schedule for the unit. Take the unit out of the sleeve and thoroughly clean and rinse. Be sure to include in the yearly cleaning the evaporator coils, and condenser coils, base pan, and drain passages. Scheduled maintenance can be accomplished by either qualified local maintenance staff or by an authorized servicer. They must follow the instructions described in this manual.

Adverse Operating Conditions Maintenance

Units operating in dusty or corrosive locations; i.e. dusty construction site or sea coast, must be cleaned more often. A minimum of four (4) times a year will maintain proper operational conditions and protect unit components.

Wall Sleeve

Clean the wall sleeve while cleaning the unit. The caulking around the sleeve should be checked to make sure that any potential air and water openings around the sleeve are properly sealed. The wall sleeve’s level should also be rechecked. Proper leveling for most installations are a 1/4" bubble tilt to the outside and level from right to left. Contact your sales person for detailed maintenance or cleaning instructions.

Base Pan and Condenser Coil

⚠ CAUTION

Do not use commercial grade coil cleaners. Some of these cleaners may contain Ethylene Diamine Tetracetic Acid (EDTA), which can shorten the life of the condenser coil.

Before cleaning the basepan and condenser coil, disconnect power to the unit. To disconnect power, either unplug the power cord at the wall outlet or subbase, or disconnect power at the fuse box or circuit breaker.

1. Create a water-tight seal by tightly covering the entire control panel area and fan motor with plastic. Creating this seal prevents water from entering the control area or the fan motor and damaging the unit.
2. Spray condenser coil and base pan down with water. Next spray a mild biodegradable detergent such as Simple Green™ onto the condenser coil and base pan. Let set for five (5) minutes.
3. Rinse condenser coil and base pan with water again.

Note: *Ensure water pressure is no higher than that of an ordinary garden hose and the water temperature no higher than 120°F.*

4. Tilt the non-compressor side of the unit up no higher than 45 degrees and allow water to drain out the other side of the unit.
5. Remove excess water left in the base pan by wiping the base pan with a dry cloth.
6. Remove the water-tight seal from the motor and control panel area.
7. Reinstall unit back into wall sleeve.
8. Allow unit to dry for 24 hours before reapplying power. When power is reapplied test unit for proper operation.
9. Place a non-acidic algaecide in the base pan to inhibit bacteria growth. Ensure the algaecide is compatible with wet coil operation and is not corrosive to the coil.

⚠ CAUTION

High pressure and high temperature cleaning is not recommended. Doing so could damage the aluminum fin stock and electrical components.

PTAC/PTHP Startup Report–Audit

Job Name _____ City _____G.O. # _____

Installer _____Total No. of Units_____

Date of Final Inspection and Start-up _____

Manufacturers' Representative Name _____

Unit Type

☐ APTAC 16 × 42 ☐ Type K

☐ APTAC 16 × 44 ☐ Type J

☐ Enersaver ☐ PGAN

Name of Maintenance Manager Instructed _____ Other_____

Essential Items Check

A. Voltage Check _____ Volts (measured)

B. Yes	No	Condition	Yes	No	Condition
☐	☐	Filters Clean	☐	☐	Operates in Heating
☐	☐	Evaporator Coils/Drain Pans Clean	☐	☐	Operates in Cooling
☐	☐	Wall Boxes Sealed To Wall, No Leaks	☐	☐	Operates in Fan Only (if so equipped)
☐	☐	Wall Box Pitch Satisfactory	☐	☐	Hi-Lo Fan Speed Operational (if so equipped)
☐	☐	Air Discharge Free of Obstruction	☐	☐	Fans Rotate Freely Without Striking Fan Housing
☐	☐	Condenser Air Free of Obstruction	☐	☐	Cycle/Continuous Fan (if so equipped)
☐	☐	Other Conditions Found: _____			

_____

_____

Note: *"No"* answers above require notice to installer by memorandum (attached copy).

Please include any suggestions or comments: _____

_____

_____

_____

_____

Above System is in Proper Working Order

_____
Date

_____
Sales Representative Signature

_____
Customer Signature

FOR INTERNAL USE

Release:

SM _____

CTS _____

T_____

_____
Service Manager Approval

_____
Date

Form No. 13F-1206

Troubleshooting

Trouble	Cause	Cure
1. Blowers won't operate on cool	a. No power	a. Check supply line fusses, circuit breakers, and be sure the power is on. Blown fuses would indicate circuit overloading, a short circuit, or a ground condition in the circuit Voltage supply to the equipment should be checked. Voltage underload must be within 10% of voltage given on date plate.
	b. Faulty touchpad/thermostat.	b. Replace.
	c. Loose connections at push-button switch.	c Tighten.
2. Blowers operate on cool but compressor does not start	a. Thermostat set too high.	a. Adjust room temperature setpoint to a lower temp.
	b. Heat valve is open and heat is on.	b. Close heat valve.
	c. Low voltage.	c. Check as above.
	d. Faulty touchpad/thermostat.	d. Replace.
	e. Faulty connection at touchpad/thermostat	e. Tighten.
	f. Defective wiring to thermostat.	f. Replace.
	g. Loose connections at compressor terminals.	g. Tighten.
	h. Wiring to compressor terminals defective.	h. Replace.
	i. Loose connections in compressor overload device.	i. Tighten.
	j. Starting capacitor malfunctions (open circuited, short circuited or loss of capacity).	j. Replace.
	k. Defective compressor motor (short circuited, open circuited, grounded).	k. * Ship cooling chassis prepaid to nearest Daikin authorized warranty station.
3. Blowers run on cool and compressor starts but stops after a short interval.	a. Operation of overload device due to overloading compressor motor.	a. Check voltage supply. Clean condenser inside and out. Check at outside face of condenser for recirculation of condenser air. Put air "splitters" in, if missing. Check compressor for short circuit. If defective, ship cooling chassis to nearest DaikingMcQuay authorized warranty station.
4. Blowers run on cool and compressor starts and runs, but compressor occasionally stops (on overload device).	a. Low voltage due to overload circuits within building or throughout the local power system. Due to varying power demands, this condition might exist only at certain times during the day or on very hot days.	a. Run separate electric line to equipment Consult local power company.
	b. High voltage due to fluctuations in local power system; usually occurs during low load periods of the day	b. Consult local power company.
	c. Partial short circuit in compressor motor. Under normal loading a compressor with a partial short circuit might appear to be operating all right; increased condensing air temperature might then cause a short.	c. If confirmed, ship cooling chassis prepaid to nearest Daikin authorized warranty station.
5. Compressor starts and runs on cool but blowers do not run.	a. Faulty touchpad/thermostat.	a. Replace.
	b. Open circuited blower motor.	b. Replace.
	c. Blower rubbing against its housing.	c. Adjust blower motor or blower wheel position.
	d. Bearings on blower motor seized.	d. Replace motor
	e. Loose connection at touchpad/thermostat.	e. Tighten.
6. Compressor starts and runs on cool, but fan motor starts, then stops.	a. Operation of the internally connected overload device due to a short circuit in blower motor.	a. Replace motor
	b. Windings, rubbing of blower wheel or lack of lubrication in blower motor bearings.	b. Adjust blower wheel or motor, or replace.
7. Equipment gives electrical shock.	a. Grounded electrical circuit.	a. Eliminate ground.
8. Insufficient cooling capacity.	a. Equipment standing too long without being run.	a. If the air conditioner is allowed to stand for an extended length of time without being run on cool, it is possible for all the refrigerant to become absorbed in the oil inside the compressor and refrigeration circuit. If this should happen there will be no cooling until the necessary working pressures have been established. This will take about 5 minutes of continuous running.
	b. Insufficient airflow through condenser due to: 1) Dirty condenser. 2) 0bstructed louver on outer cabinet or wall box. 3) Condenser blower/fan not running. 4) Condenser blower/fan not up to speed. 5) Condenser blower/fan slipping on motor shaft. 6) Recirculation of condenser air.	b. 1) Clean. 2) Remove obstructions. 3) Check same as in the case of malfunctioning condenser air blower. 4) Check for correct voltage. Replace blower motor if necessary 5) Adjust blower position and tighten setscrews. 6) Correct as in No 3 above.
	c. Insufficient airflow through evaporator due to: 1) Dirty evaporator. 2) Ice on evaporator coils. 3) Dirty air filter. 4) Obstructed discharge grilles. 5) Evaporator blower motor not running. 6) Evaporator blower motor not up to speed. 7) Evaporator motor slipping on motor shaft.	c. 1) Clean. 2) Turn equipment off to let ice melt (see last two items of No. 9 "Too much cooling," on page 27. 3) Clean or replace. 4) Remove obstructions. 5) Check as in No. 1. 6) Check for correct voltage. Replace motor if necessary. 7) Adjust blower wheel position and tighten setscrew
	d. Heat load in room exceeds capacity of equipment.	d. Refer to original load calculations, recalculate heat load.
	e. Windows and doors in room are open	e. Close them.
	f. Compressor not pumping, indicated by: 1) Low wattage. 2) Condenser not warm, evaporator only partially cool or not at all .	f. * Ship prepaid to nearest Daikin warranty station.
	g. Restricted capillary or strainer. 1) Frost on capillary or strainer 2) Low wattage. 3) Condenser not warm. 4) Evaporator partially frosted, only partially cool or not at all.	g. * Ship prepaid to nearest Daikin warranty station.

Trouble	Cause	Cure
9. Too much cooling.	a. Thermostat set too low. b. Defective thermostat	a. Adjust. b. Replace.
10. “Sweating.”	a. Condensate drain from evaporator to condenser plugged. b. Insulating seals on equipment damaged. c. Evaporator blower motor not up to speed. d. Evaporator blower incorrectly positioned.	a. Remove obstructions to water flow. b. Adjust or replace. c. Check for correct voltage. Replace motor if necessary. d. Tighten.
11. Blowers won’t operate on Heat.	a. No power. b. Check HFLO installation/correction c. Heat is off (equipment with heat fan lock out. d. Faulty touchpad/thermostat e. Loose connections at touchpad/thermostat f. Thermostat set too low.	a. See No. 1. b. Open heat valve or turn on heating system. c. Replace. d. Tighten. e. Adjust room temperature setpoint to a higher temp.
12. Equipment is noisy.	a. Blower rubbing against enclosure. b. Blower motor bearings dry. c. Loose blower hold-down nuts on motor-bracket assembly d. Refrigerant absorbed in compressor oil after extended shutdown. e. Equipment improperly installed. f. Damper solenoid hums. g. Loose terminal box cover on side of compressor. h. Loose electrical components. i. Copper tubing vibrating. j. Harmonics.	a. Adjust fan position on motor shaft or reposition fan motor bracket assembly. b. Replace motor. c. Align blower assembly and tighten nuts. d. Noise will disappear after equipment runs awhile. e. Make necessary adjustments to components. f. Check for proper adjustment. Apply silicone oil or grease to gap between solenoid and armature. g. Tighten. h. Fasten securely. i. Occasionally equipment will have noise for no apparent reason. Inspection has revealed no loose components that might be the source of the noise. Due to the action of the compressor, it is possible to have internal noise develop if the refrigerant tubing has become bent even slightly. To distinguish this condition from the simple rattle producing vibration caused by loose screws, nuts and other components, grasp the refrigerant tubing at various points throughout the system until a point is found where the noise is eliminated or reduced. Bend the copper tubing very gently until the noise disappears. j. Tighten.
13. Insufficient or no heat.	a. No steam or hot water being applied. b. No power. c. Faulty touchpad/thermostat. d. Loose connection at touchpad/thermostat. e. Thermostat set too high. f. Thermostat faulty. g. No power output on transformer secondary. h. Inoperative valve. 1) Steam valve N/C. 2) Hot water valve N/C.	a. Contact building management. b. Check power supply line fuse, circuit breakers. Blown fuses would indicate circuit overloading, a short circuit, or a grounded condition in the circuit. c. Replace. d. Replace wire or tighten. e. Adjust room temperature setpoint to a higher temp. f. Replace. g. Replace. h. 1) Temporarily lock valve open; replace. 2) Replace.

Notes:

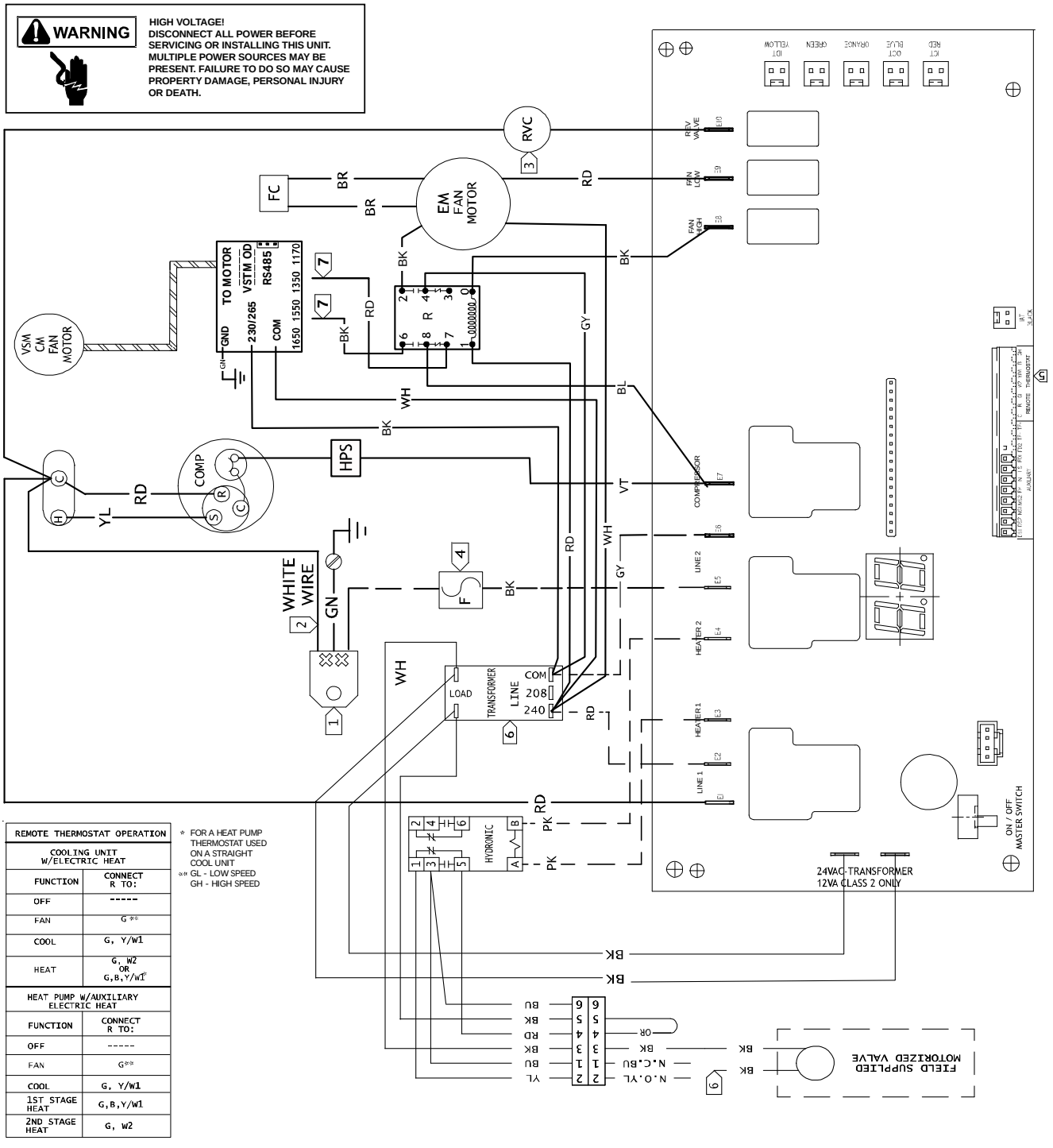
This guide was prepared with standard equipment in mind. If equipment is special, it may not be entirely applicable.

* *If equipment is still in warranty.*

** ***Notice:*** *Before trying to correct the noise, determine its cause: conditioned air blower, compressor or condenser blower. Operate the conditioned air blowers only. If this doesn’t cause the noise, operate on cooling. Then disconnect one compressor lead. If the noise stops, the compressor is the source, If not, it is caused by the condenser blower.*

Wiring Diagrams

PGAN with Hydronic Heat



REMOTE THERMOSTAT OPERATION	
COOLING UNIT W/ELECTRIC HEAT	
FUNCTION	CONNECT R TO:
OFF	-----
FAN	G **
COOL	G, Y/W1
HEAT	G, W2 OR G,B,Y/W1*
HEAT PUMP W/AUXILIARY ELECTRIC HEAT	
FUNCTION	CONNECT R TO:
OFF	-----
FAN	G**
COOL	G, Y/W1
1ST STAGE HEAT	G,B,Y/W1
2ND STAGE HEAT	G, W2

* FOR A HEAT PUMP THERMOSTAT USED ON A STRAIGHT COOL UNIT

** GL - LOW SPEED
GH - HIGH SPEED

NOTES:

1. WARNING: DISCONNECT POWER BEFORE SERVICING. WIRING TO UNIT MUST BE PROPERLY POLARIZED (FOR 265V) AND GROUNDED.
2. WHITE WIRE MUST BE CONNECTED AS SHOWN.
3. ON HEAT PUMP MODELS ONLY.
4. BK ON LINE 2 WITH FUSE SHOWN CONNECTED FOR 265V. FOR 230V & 115 V, CONNECT POWER CORD TO LINE 2.
5. FOR REMOTE OPERATION, SEE CONFIGURATION CHART.
6. 265V AND 115V TRANSFORMER NOT SHOWN.
7. SEE TABLE FOR MOTOR SPEED SELECTION.

USE COPPER CONDUCTORS ONLY

CHASSIS — GN1 — CONTROL PANEL

WIRE LEGEND

- HIGH VOLTAGE (FACTORY)
- HIGH VOLTAGE (FACTORY OR FIELD)
- LOW VOLTAGE (FACTORY OR FIELD)
- HIGH VOLTAGE DC HARNESS (FACTORY)

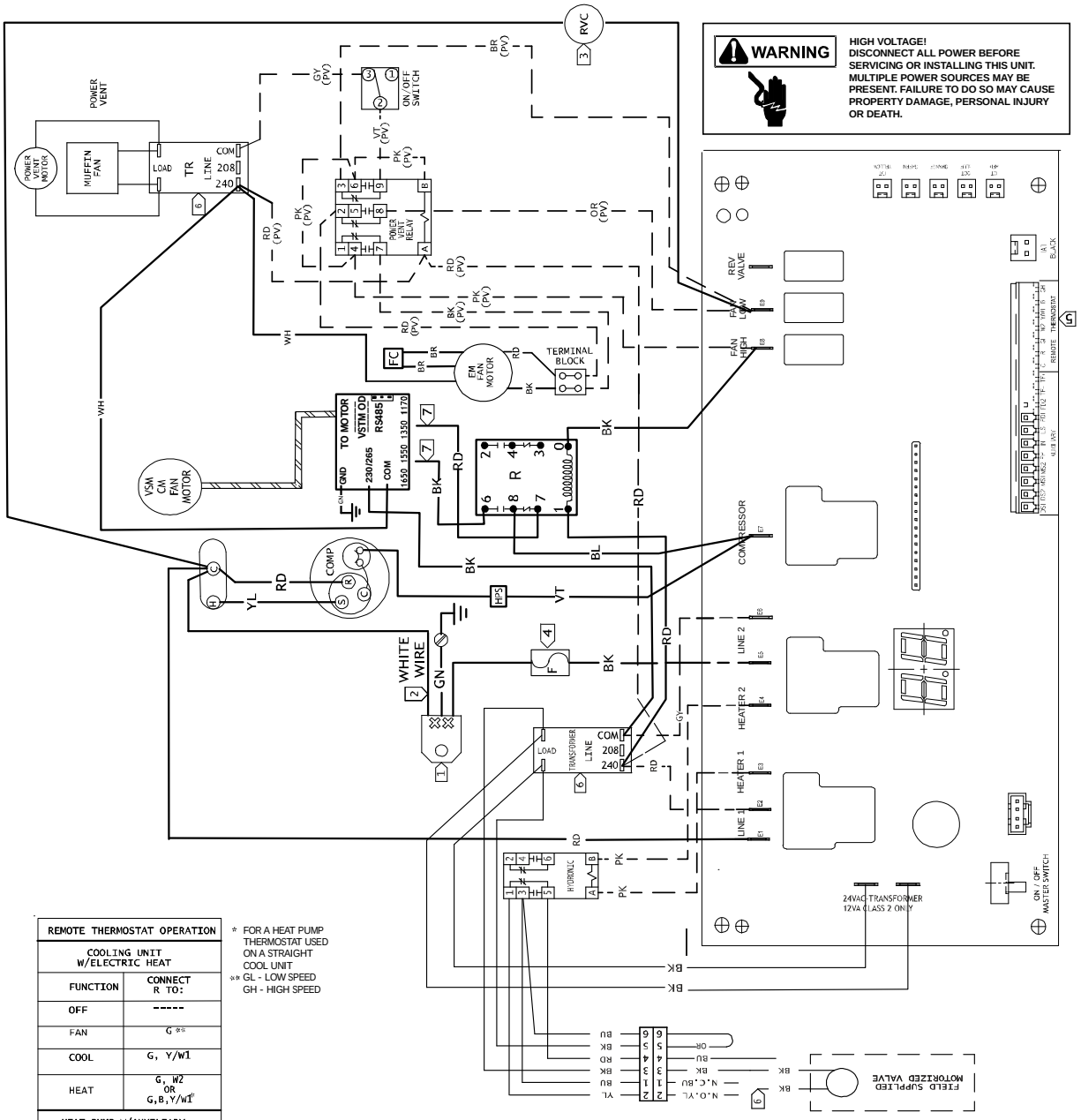
CM	OUTDOOR FAN MOTOR
COMP	COMPRESSOR
EM	EVAPORATOR MOTOR
FC	FAN CAPACITOR
F	FUSE
HPS	HIGH PRESSURE SWITCH
HTR	HEATER ELEMENT
R	RELAY
RCCF	RUN CAPACITOR FOR COMPRESSOR AND FAN
RVC	REVERSING VALVE
TR	TRANSFORMER
VSM	VARIABLE SPEED MOTOR
VSTM	VARIABLE SPEED TERMINAL BOARD

Outdoor Motor Speed Selection		
Model or Mfg. # Starts With	High Speed VSTM Black	Low Speed VSTM Red
MTC15	1650	1350

IO-440
02/2013

Wiring is subject to change.

PGAN with Hydronic Heat, Power Vent and Power Door



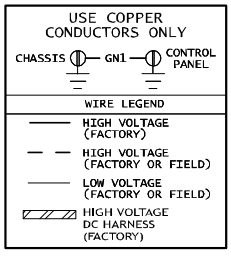
REMOTE THERMOSTAT OPERATION	
COOLING UNIT W/ELECTRIC HEAT	
FUNCTION	CONNECT R TO:
OFF	-----
FAN	G **
COOL	G, Y/W1
HEAT	G, W2 OR G,B,Y/W1*
HEAT PUMP W/AUXILIARY ELECTRIC HEAT	
FUNCTION	CONNECT R TO:
OFF	-----
FAN	G**
COOL	G, Y/W1
1ST STAGE HEAT	G,B,Y/W1
2ND STAGE HEAT	G, W2

* FOR A HEAT PUMP THERMOSTAT USED ON A STRAIGHT COOL UNIT
** GL - LOW SPEED
GH - HIGH SPEED

Outdoor Motor Speed Selection		
Model or Mfg. # Starts With	High Speed VSTM Black	Low Speed VSTM Red
MTC15	1650	1350

NOTES:

1. WARNING: DISCONNECT POWER BEFORE SERVICING. WIRING TO UNIT MUST BE PROPERLY POLARIZED (FOR 265V) AND GROUNDED.
2. WHITE WIRE MUST BE CONNECTED AS SHOWN.
3. ON HEAT PUMP MODELS ONLY.
4. BK ON LINE 2 WITH FUSE SHOWN CONNECTED FOR 265V. FOR 230V & 115 V, CONNECT POWER CORD TO LINE 2.
5. FOR REMOTE OPERATION, SEE CONFIGURATION CHART.
6. 265V AND 115V TRANSFORMER NOT SHOWN.
7. SEE TABLE FOR MOTOR SPEED SELECTION.

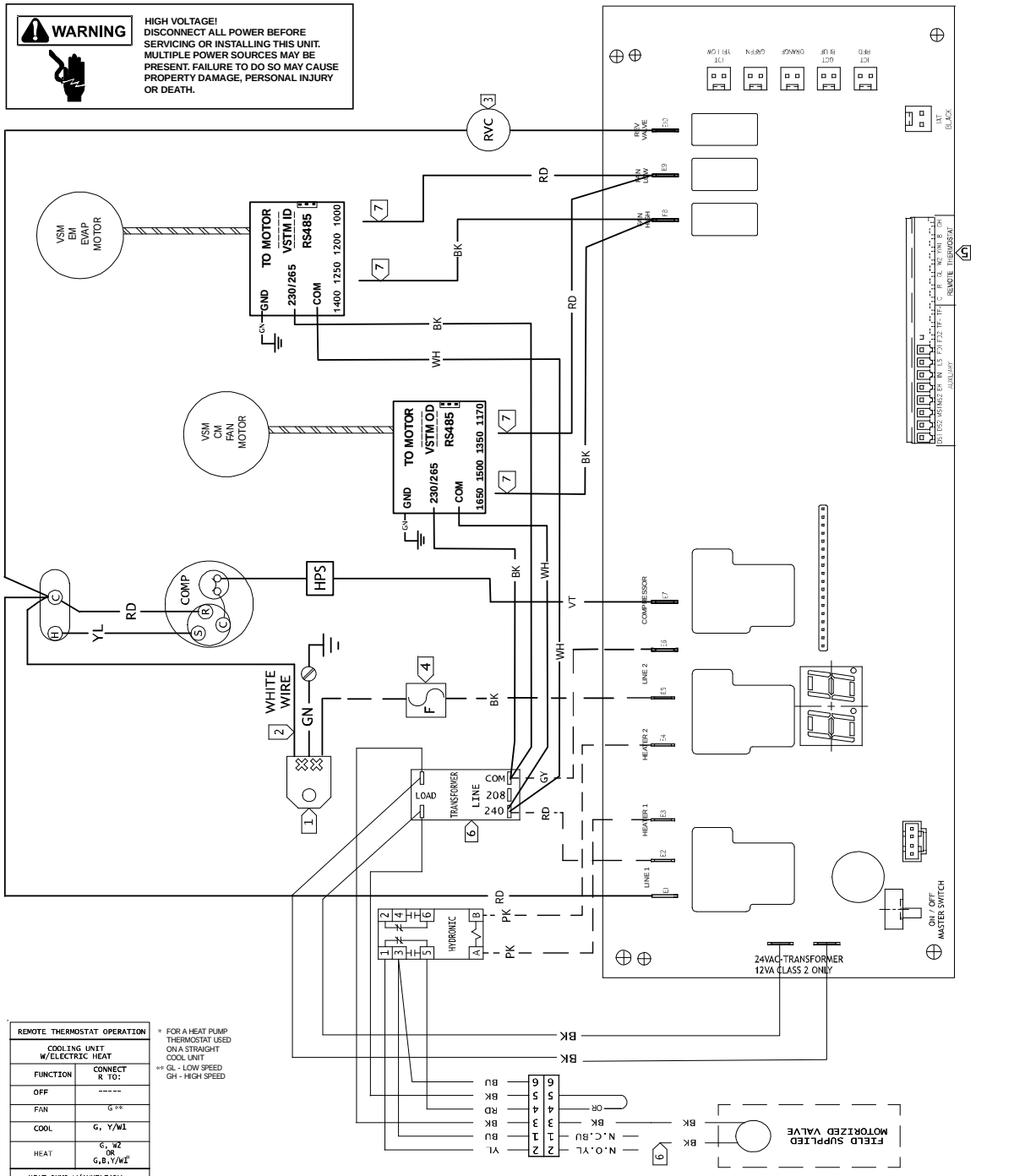


CM	OUTDOOR FAN MOTOR
COMP	COMPRESSOR
EM	EVAPORATOR MOTOR
FC	FAN CAPACITOR
F	FUSE
HPS	HIGH PRESSURE SWITCH
HTR	HEATER ELEMENT
R	RELAY
RCCF	RUN CAPACITOR FOR COMPRESSOR AND FAN
RVC	REVERSING VALVE
TR	TRANSFORMER
VSM	VARIABLE SPEED MOTOR
VSTM	VARIABLE SPEED TERMINAL BOARD

IO-441
2/2013
Wiring is subject to change.

Wiring Diagram

PGAN with Hydronic Heat, Variable Speed Condenser and Evaporator Fan Motors



REMOTE THERMOSTAT OPERATION	
COOLING UNIT W/ELECTRIC HEAT	
FUNCTION	CONNECT R TO:
OFF	-----
FAN	G **
COOL	G, Y/W1
HEAT	G, W2 OR G,B,Y/W1*
HEAT PUMP W/AUXILIARY ELECTRIC HEAT	
FUNCTION	CONNECT R TO:
OFF	-----
FAN	G**
COOL	G, Y/W1
1ST STAGE HEAT	G,B,Y/W1
2ND STAGE HEAT	G, W2

* FOR A HEAT PUMP THERMOSTAT USED ON A STRAIGHT COOL UNIT

** GL - LOW SPEED
GH - HIGH SPEED

NOTES :

1. WARNING: DISCONNECT POWER BEFORE SERVICING. WIRING TO UNIT MUST BE PROPERLY POLARIZED (FOR 265V) AND GROUNDED.
2. WHITE WIRE MUST BE CONNECTED AS SHOWN.
3. ON HEAT PUMP MODELS ONLY.
4. BK ON LINE 2 WITH FUSE SHOWN CONNECTED FOR 265V. FOR 230V & 115 V, CONNECT POWER CORD TO LINE 2.
5. FOR REMOTE OPERATION, SEE CONFIGURATION CHART.
6. 265 AND 115V TRANSFORMER NOT SHOWN.
7. SEE TABLE FOR MOTOR SPEED SELECTION.

USE COPPER CONDUCTORS ONLY

CHASSIS — GN1 — CONTROL PANEL

WIRE LEGEND

- HIGH VOLTAGE (FACTORY)
- HIGH VOLTAGE (FACTORY OR FIELD)
- LOW VOLTAGE (FACTORY OR FIELD)
- HIGH VOLTAGE DC HARNESS (FACTORY)

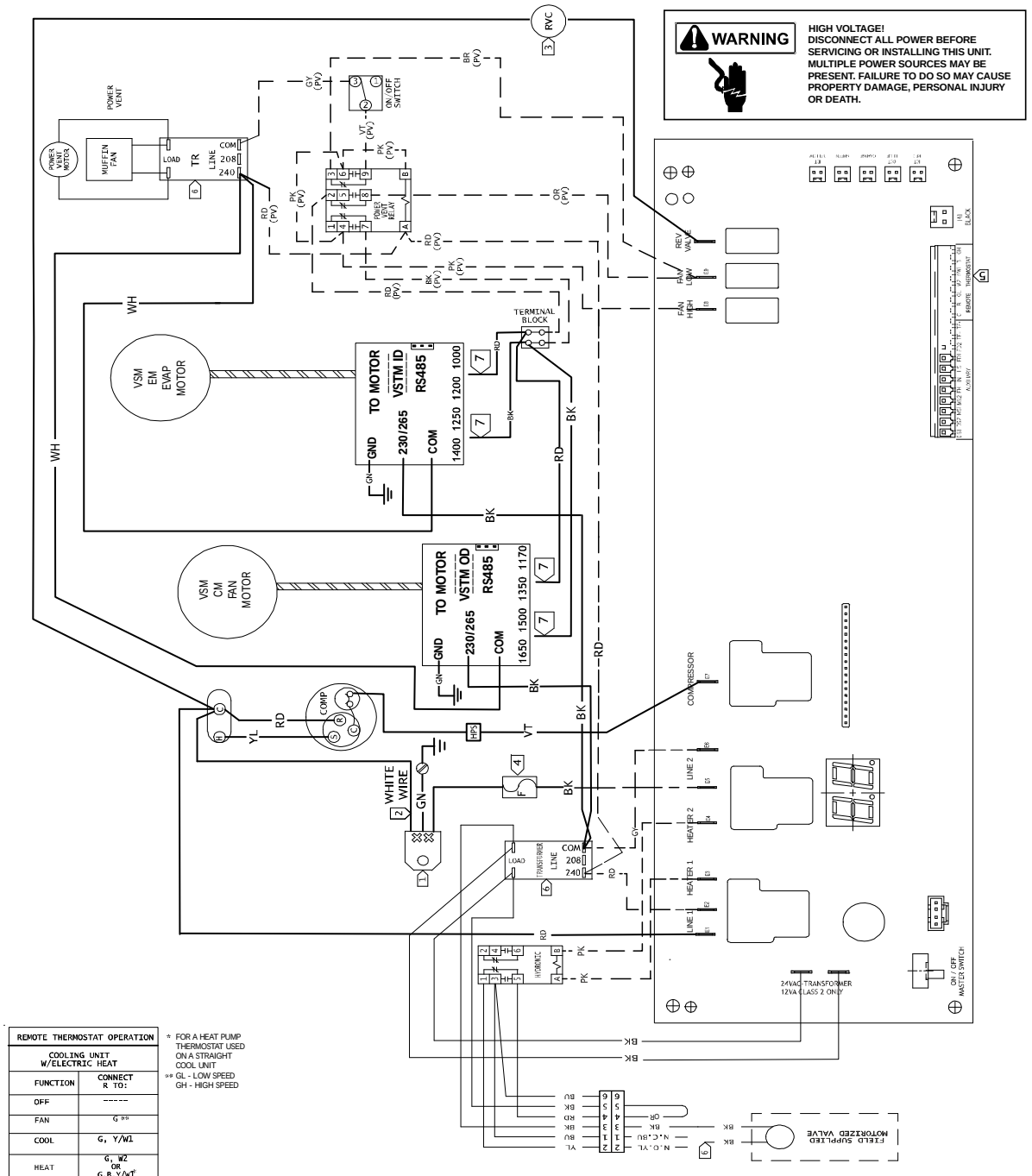
CM	OUTDOOR FAN MOTOR
COMP	COMPRESSOR
EM	EVAPORATOR MOTOR
FC	FAN CAPACITOR
F	FUSE
HPS	HIGH PRESSURE SWITCH
HTR	HEATER ELEMENT
R	RELAY
RCCF	RUN CAPACITOR FOR COMPRESSOR AND FAN
RVC	REVERSING VALVE
TR	TRANSFORMER
VSM	VARIABLE SPEED MOTOR
VSTM	VARIABLE SPEED TERMINAL BOARD

Indoor Motor Speed Selection		
Model or Mfg. # Starts With	High Speed VSTM Black	Low Speed VSTM Red
MTC07	1400	1250
MTC09	1400	1250
MTC12	1400	1250

Outdoor Motor Speed Selection		
Model or Mfg. # Starts With	High Speed VSTM Black	Low Speed VSTM Red
MTC07	1350	1170
MTC09	1350	1170
MTC12	1350	1170

IO-788
2/2013
Wiring is subject to change.

PGAN with Hydronic Heat, Variable Speed Condenser, Evaporator Fan Motors, Power Vent and Door Option



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MTC09	1350	1170
MTC12	1350	1170

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Now that you have made an investment in modern, efficient Daikin equipment, its care should be a high priority. For training information on all Daikin HVAC products, please visit us at www.DaikinAP.com and click on training, or call 540-248-9646 and ask for the Training Department.

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